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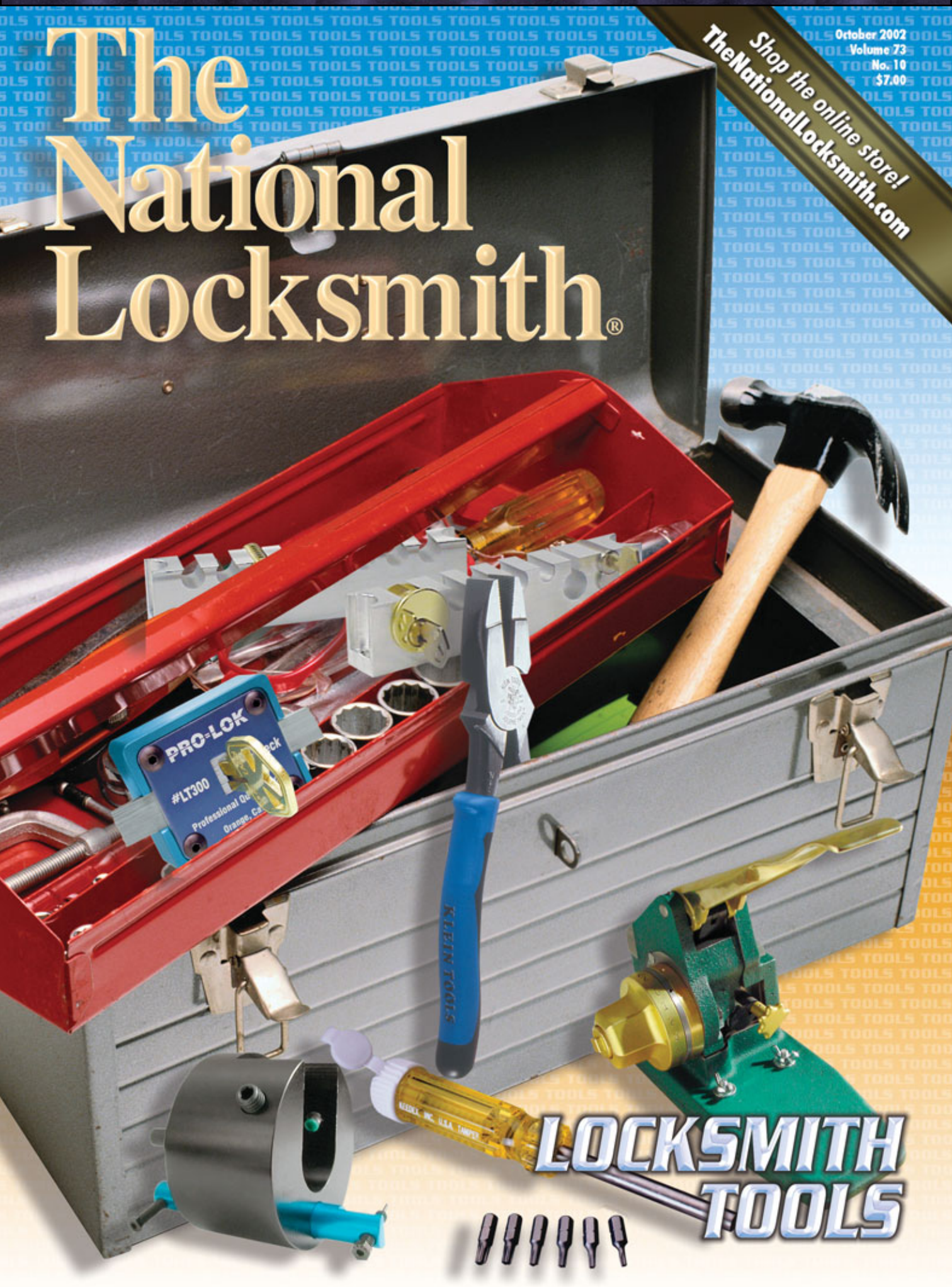

LOCKSMITH TOOLS

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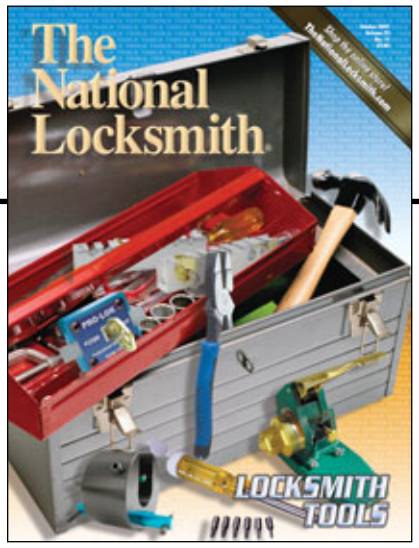
On The Cover...



Who doesn't love new tools and gadgets, and this year there are plenty to choose. New tools by HPC, PRO-LOK. A-1, Ilco and KEEDEX are just a few that will wet the pallet.

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COMMENTARY

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And in the news tonight...

From time to time, we scan the news and report on mentions of locksmiths made in the media. Here are a few interesting stories concerning locksmiths.

From the July 27, 2002 edition of *The New York Times*, under the headline, "Landlord of Missing Manhattan Couple to Be Paroled in Month."

Five years ago Camden Sylvia and Michael Sullivan disappeared from their apartment in Manhattan. The couple is presumed to be dead. The case has become one of the city's most notorious unsolved crimes.

A main suspect in the case, Robert Rodriguez, the couple's landlord, has never been definitively linked to the disappearance, although investigators say that Ms. Sylvia and Mr. Sullivan were last seen in November 1997 after arguing with him about a problem with the heat in the dwelling.

Next month, Mr. Rodriguez will be released from prison, where he is serving time after a 1999 guilty plea to tax evasion, larceny and credit card fraud — charges that arose during the investigation into the couple's disappearance. Mr. Rodriguez was to serve two to six years in prison, but correction officials confirmed yesterday that he had been granted parole and would be freed on Aug. 30.

The police searched the Hudson River. They organized helicopter flights over Mr. Rodriguez's seven-acre estate in Slate Hill, N.Y., using infrared devices to look for bodies. They sent dogs sniffing around its edges in hopes of unearthing enough evidence for a search warrant. They brought in more dogs after tearing up the floor of a **locksmith shop** that Mr. Rodriguez owned on the ground floor of 76 Pearl Street. Each time, they found nothing.

Reported by the AP under the headline "Baseball union sets Aug. 30 strike date," a locksmith was quoted for the fans' viewpoint.

"It's ridiculous," Brian Orndoff, a 24-year-old **locksmith**, said at Baltimore's Camden Yards, speaking of the possible baseball players strike. "Most of the players make over one million dollars a year. School teachers make it on 30 grand. What do they have to complain about? If they get what they want, ticket prices will go up. I'm not paying to watch million-dollar crybabies."

The AP reported the following story under the headline, "Bombs Found in Fla. Podiatrist's Home"

SEMINOLE, Fla. (AP) - A group of townhouses were evacuated after guns and explosives were found in the home of a podiatrist whose wife had called police, saying he was acting unstable.

The Pinellas County Sheriff's office said deputies took Dr. Robert Goldstein, 37, in for psychiatric evaluation late Thursday. He was placed in custody under the Baker Act, which allows involuntary commitment for analysis.

Authorities found more than 20 semiautomatic weapons and what appeared to be a 5-gallon gasoline bomb in the upstairs loft of the suburban St. Petersburg home, Detective Cal Dennie said. Deputies also found five or six rectangular packages with timers on them.

Dennie said Thursday that the evacuations displaced between 25 and 30 people. He did not immediately return calls early Friday.

WMTX in St. Petersburg reported Friday that residents were still kept from their homes while deputies waited for a **locksmith** to open a safe that might contain more explosives.

Note from Marc: Do you suppose this locksmith got combat pay?

Marc Goldberg

Have questions? Want free technical help? Free Locksmith Forums!
www.TheNationalLocksmith.com

Marc Goldberg
Publisher

Mango's Message

Bound, Gagged & Suffocated

On the morning of August 11, 2002 Joseph "Ed" Walsh's life came to an untimely, and brutal end. Ed was a Wentzville, Missouri resident and fellow locksmith.

In the Sunday early morning hours, two men approached Ed's home planning to burglarize the residence. To implement their plan, they first cut the phone line so an alarm signal could not be sent or 911 called. Then they forced the front door open and proceeded to enter. Ed was in his bedroom at the time when he was confronted by the intruders.

In an effort to restrain him, Ed's arms and legs were bound with duct tape. The house was then looted, loading items the perpetrators had selected into Ed's locksmith service van for transportation. In the interim, Ed was screaming for help. In an attempt to silence him, one of the intruders went back to the bedroom and wrapped duct tape around Ed's face, covering his mouth and nose. The men then continued to load such items as Ed's TV, VCR, microwave, guns and golf clubs into the van. When finished, the men drove back to their residence where they reportedly unloaded the items and then abandoned the van.

A few days later a police officer discovered the abandoned van which triggered an investigation. On the assumption that the vehicle was stolen, police first tried to contact Ed by phone, but there was no answer. When investigators arrived at his home they discovered that the front door was ajar, and later found Ed dead in the bedroom. The official cause of death was suffocation, although there have been unconfirmed reports that Ed also suffered head trauma.

Ed lived in the home alone after losing his wife just 10 months earlier.

This is a tragically sad story. I can't imagine the fear, anguish, and sense of helplessness Ed experienced as he endured this ordeal. And, as if what occurred wasn't bad enough, the story actually gets worse.

The following Friday one of the alleged suspects was apprehended and charged with second-degree murder, first degree-burglary and second-degree robbery. The man in custody is 21 year old Jonathan M. Riggs... Ed Walsh's stepgrandson. Riggs' accomplish was his roommate 18 year old Jon D. Conderman.

Riggs' girlfriend told police that Riggs and Conderman had unloaded items from Ed's van at their home. Conderman and his girlfriend then fled the state, briefly being spotted in Tennessee. After learning that Riggs was arrested and charged in the case, Conderman returned to Missouri with a lawyer and turned himself into Wentzville police.

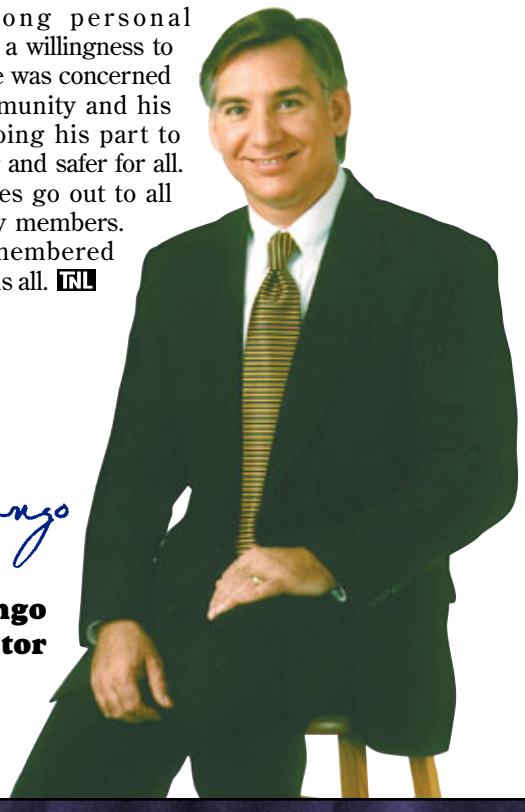
Both suspects are being held on a $500,000 cash-only bail.

Ed was 65 years old and served as an alderman for Wentzville for one term, from 1991 to 1993, and as president of the Board of Aldermen in 1992. Ed also served as a reserve officer for the Wentzville Police Department. Ed was a Marine "Jug Head" and recently inducted as commander of American Legion Post 232.

Of all his activity and community involvement, one of the things Ed loved most was locksmithing. He owned and operated Mo-Tri County Locksmiths and was an active member and subscriber to *The National Locksmith*.

One has to ask what would cause a family member like a stepgrandson to perpetrate such a hideous act? Further investigation revealed that Riggs and Conderman stole the goods to unload for quick cash so they could support their drug habit.

There are far too few men like Ed with strong personal convictions and a willingness to get involved. He was concerned about his community and his fellow man, doing his part to make life better and safer for all. Our condolences go out to all surviving family members. He will be remembered and missed by us all. TNL



Greg Mango

Greg Mango
Editor

Letters

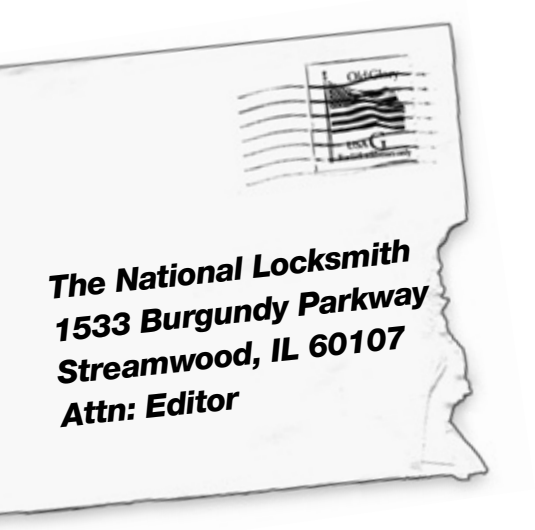
The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

A Locksmith's Impression of Professionalism

All too often when I meet with other locksmiths, I notice some of them are burdened with large key rings dangling from their belts. When asked why, they respond with *"Oh, those are the master keys to my customers building."* Noting that if the rings were to suddenly break off for some reason, the locksmith would snap back suddenly, like a branch in the wind, and maybe an awareness of a dropped ring would take place on the Richter Scale. Oh, and don't forget to look at their dining room chair.

As a security professional, I have to look at the security risk and the impression one of those building owners might have.

As a property owner, I would be concerned that my master key system that I just spent thousands of dollars on, would be carried so casually and so far from my facility. After all, didn't that guy just finish promoting himself as a security professional?



Maybe some guys like to show off their keys like a decorated veteran. Like "Look at me: see how important I am."

I look at this a bit differently. I am promoting myself as a security professional, as a person my customer or potential customer looks to for solving their security problems. Usually that customer has the all too familiar problem of too many keys to too many locks, and is looking for a solution that will make their lives easier.

Think about it. A person is looking for simplicity, and the locksmith comes in with two hundred keys dangling from his belt. What impression will that potential customer have?

One thing a property owner may want, is knowing that their property is secure. Wouldn't they feel better knowing that the person who just provided them with that new expensive key system, would not flash those master keys to just anyone?

If providing a professional image is not enough to convince these guys, then let's look at something that may affect the pocketbook... liability. If that key ring is lost or stolen, then all those customer's facilities have just been compromised. The locksmith is now responsible for losses, and at least to rekey those facilities at his expense, because he did not take due care.

Maybe I'm barking up the wrong tree. Should I try to convince that handyman locksmith to change their way, or let the customer make that decision for them? What do you think?

Vincent P. Chestnut, CRL
Massachusetts

Thanks To Steve Young

A word about the Jiffy Jack Tool Kit I purchased at the seminar in Eureka Springs, AR, when you were here in March.

My first use was on a Jeep Liberty 2002. When opening on the passenger side, I would raise the lock button up, pull on the door latch and the door lock would re-lock.

After the third or fourth time doing this, a bystander, not the owner, said, "Maybe the door is in a bind." So I raised the button up, took the tool out, plus the wedges, grabbed the handle and the door opened with ease.

Thought I would pass the info on to you, to let others know, in case they have the same problem.

Norman Morrison
Arkansas

Correction: In the *Keys & Key Accessories* article in the September issue, we mistakingly titled Keys Wholesale Distributors press release *"Ilco Groovy Keys."* It should have been *"Jet Groovy Keys."*

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Continued from page 8

When stocked and displayed well keys and accessories can be very profitable, and the Jet Groovy key blanks have proven to be a very hot item.

Keys Wholesale Distributors stocks a complete line of Jet Groovy Keys. For more information call: (610) 626-4787.

The Python

I just finished reading the *"Test Drive"* in the July issue about the Master Python. It sure is a great looking product, but you gave incorrect information and not enough information at the same time. First, yes it can `Cinch' the cable down, but you did not mention that Master sells the lock and Cable as a set and as separate pieces. You can buy cables in different lengths 4, 6, 8, 12, 15 & 30 Foot lengths.

And as for the "4-Pin Cylinder" that you mention it's really a 4-wafer cylinder. You can read the cut depth on the 1st & 3rd tumblers thru the key hole. Yes it does use a 1K (M1) key blank, but it's a wafer lock. Also Master is selling a rekeying kit (8491) for this lock as well. And once the lock in "locked" it cannot be cinched it is locked firmly in place. Having stocked this product I have found that it really is a great idea. The user can use as much or as little of the cable as needed for the job.

Greg Rash
Washington

Tesla Coils and Magnetic Field Generators

I was called to install a new safe with a digital lock. Since I measure for drilling the safe before installation, in case of a malfunction, I got my first good glimpse at the inner works of the lock. Looks impressive! But, the entire security of the lock depends on activating a solenoid. How high-tech is that?

A solenoid can be activated with Tesla coils and magnetic field generators over distances much thicker than a ¼" steel safe door. Hobbyists and experimenters have been doing it for 100 years. The most popular example of such an occurrence in the entertainment field is holding a fluorescent bulb 20 feet away from a Tesla coil and having it light up.

These safes are only secure against the ignorant. Is ignorance the order of the day in education so our security companies can look good?

David Craig
Illinois

Where Has Common Sense Gone?

I really enjoy reading your articles, as well as Sara's articles. All of us here at Woody's Lock & Key enjoy reading about the same things we have been dealing with for over 21 years.

People are getting more educated all the time, but common sense seems to have gone out the window. We have had customers who call us to find out how much we charge to unlock their car, and after hearing the price (which is, $30.00 Monday through Friday and $45.00 after hours and on weekends,) they reply, "Why I will break a window before I pay that!"

Needless to say they break the window and then later find out that $30.00 wasn't so bad when compared to having their window replaced.

We even had one real bright college graduate break his windshield of all things, to save some money. He may have book sense, but where oh where has common sense gone?

A few years back, a lady called the shop to tell me she was locked out of her vehicle:

"What kind of auto do you have?" I asked.

"It's a blue one," she replied.

"No ma'am, I mean what year is it."

"Why honey, it's a 1994, don't you know what year it is?"

"Yes ma'am, I know what year it is. What year is your car?"

"Oh! I don't know," she replied.

"Do you know what model of car you have?"

"Well, it's a 4-door and gives me a little trouble sometimes when I try to go uphill. It's not a very good model at all."

"Lady, do you know where you live or where your auto is?"

"Oh Yes! I'm over here off Brown Street."

"Could you give me directions to where the auto is?" I asked, with gritted teeth.

"Sure, you go a far way down Brown Street and turn where that house burned down two years ago. Then look for Jim Henry's ole brown dog a-laying at the side of the road near Sam Burn's ole barn."

By this time, I was pretty frustrated with trying to get information from this woman, so I replied, "Lady, I am so sorry we can't get there from here and my technicians are all tied up."

We have had a lot of strange things happen to us over the past 20-years, but the main thing we have tried to do is maintain our sense of humor. It is essential when dealing with the public.

Keep up the good work, and may we all try to keep what common sense the good Lord gave us, and most of all, use it!

Mary Woody

Andersen Window Co.

I had a call recently to repair a lever lock on an Andersen French patio door. The problem was simple; the handle drooped. It had a broken handle spring. The lock was warranted for 10-years. The lock was 12-years old. I called Andersen and they said no parts were available. The only solution was to replace the lock. The price was $128.00. I asked who made the lock and they told me it was Lori Lock Co.

I called Lori and they said they only made the cylinder. I called Andersen back and got no satisfaction until I talked to a supervisor. She informed me that Amerock Corp. made the lock. I called Amerock and they acknowledged that they did make the lock, but for liability reasons, they could not ship any parts because Andersen marketed it. I was informed that Amerock would not sell parts for the lock, only the whole lock. The reason was that Andersen owned the tools and designs so they have to comply with Andersen's wishes. Andersen's wishes are that no parts should be shipped.

If the customer wanted their lock fixed, they were going to have to spend $128.00 because of a broken spring. No exceptions.

Marvin A. Meyer
Iowa

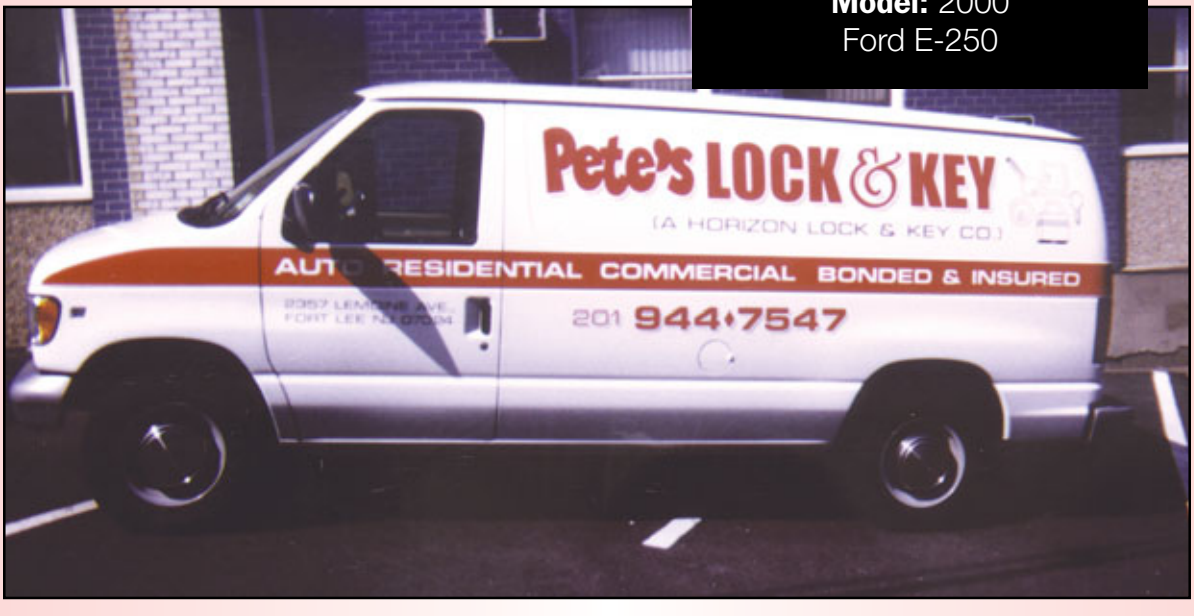
TNL

Road Rally

A showcase of locksmith service vehicles.

If you think your vehicle has what it takes to be featured here, send photographs and descriptions to:
The National Locksmith, Road Rally, 1533 Burgundy Parkway, Streamwood, Illinois 60107-1861.

Owner: Alan Keister, Middleburg, PA
Model: 1996 Ford E-250 Super Cargo Van

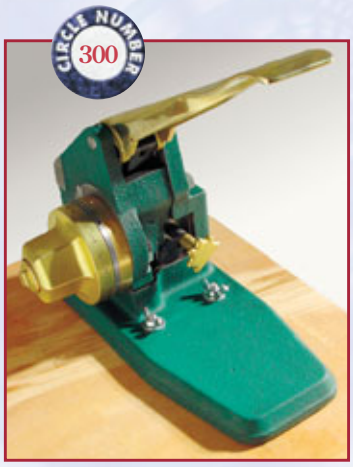


Owner: Nicholas M. Hart, CPL; Fort Lee, NJ
Model: 2000 Ford E-250

Locksmith Tools

A-1 Mean Green I/Core Tool

A-1 Security manufacturing has a new, heavy-duty key combinator designed exclusively for SFIC (small format interchangeable core). The original "best" keypunch was the inspiration behind A-1's Mean Green Machine. Because the machine is created specifically for I/core, it is designed to hold the tighter tolerances that SFIC demands.



The keypunch will punch SFIC keys for Arrow, Best, Falcon, KSP, and other standard SFIC.

The punch features interchangeable vise assemblies, allowing it to punch specialty SFIC keys such as Arrow's Flexcore. According to A-1, additional specialty vises will be added in the near future.

The machine features a large, strategically located depth knob on the left hand side and a paddle style punch actuator (handle). This combination allows for fast and easy key generation. Keys load quickly from the front of the vise assembly and are secured by a heavy-duty pressure plate.

Aable Ford Focus Drill Guide and Force Tool Kit

Locksmiths have had problems servicing the Ford Focus, and that particular model now has four different types of locks. Aable Locksmiths has designed a Ford Universal Ignition Removal Tool Kit, which will service all four Ford Focus ignitions as well as most other Ford ignitions. The kit contains a force tool, which will remove face disks, and also contains methods to remove both

large and small diameter side bar ignitions and small diameter ignitions without a side bar.

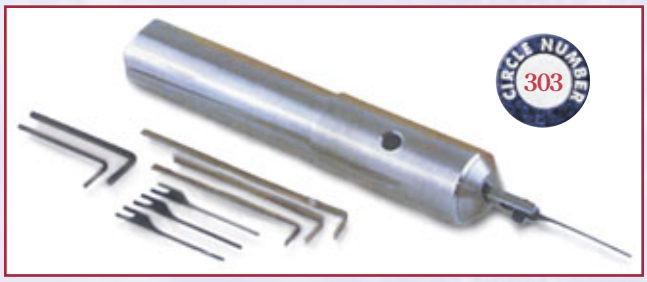
Barnes Quad Cut Drill Bits

Barnes Distributions' Maintenance Length Quad-Cut drill bits are specifically designed to meet the needs of today's hand-held drill market.

They offer amazing stability and control. Barnes Distribution is the parent company of Curtis.

ESP Electric Lock Pick

ESP's Electric Lock Pick, which is made from aircraft aluminum and hard steel construction, has a 3-volt electrical system, which is powered by two conventional alkaline or Nicad "C" cell batteries. The pick includes four picking needles, three tension tools and two adjustment wrenches.



Gator Tool Wafer Popper

Are you frustrated trying to remove stuck wafers? Holding the lock and a screwdriver in one hand and a small hammer in the other, giving it a tap, hoping not to break anything or causing injury to your fingers. This is why Gator Tools Co. has developed a new tool, the "Wafer Popper."

What can be more convenient than having three hands? Well… it's a pair of pliers to remove those wafers from corroded, peened and stuck locks. You simply position the lock within the tool and squeeze gently. Your wafer will "pop out" of the backside of the lock and into your hand. After rekeying or repairing your lock, simply start the wafer back in the hole, position the pliers and gently squeeze them one more time to push the wafer back into the lock.

Click… click… click, its just that quick! Gator Tools Co. is dedicated to provide the professional locksmith quality hand tools.

GKL Hinge Doctor

Did you ever have to file a door strike because the latch is suddenly below the strike hole? Or the top of the door is hitting the doorframe? Well put away that file and you won't need to remove the hinge to bend it back in your vise either. Just use the new "Hinge Doctor" tool. It will fix that sagging door in a minute in just two easy steps.

Just slide the tool over the hinge while the door is closed, hold it there with one hand while you open the door with your other hand. The door will start to bind and will feel springy. Continue pulling the door open another few inches or so. At this point, if it's a hollow metal door, you're realigning the hinge mounting plate, or if it's a wood door, the hinge will start bending back to its original shape.

High Tech View Master

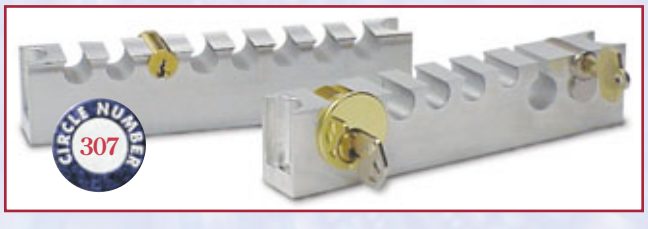
Nothing is more frustrating than trying to work on a car and not being able to see the door lock button move as you manipulate your tool. The View Master from High Tech Tools solves the age-old problem of watching the door lock button while you're trying to unlock the door.

By placing the View Master on the opposite door glass, or on the windshield, you can see the door panel and or lock button on the car door you are currently working on. The flashlight holder is designed to hold a mini mag light (not included) or similar light to give you a clear view, even at night.

Ilco Cylinder Service Fixtures

Kaba Ilco Corp. introduces two new tools of value to anyone that pins cylinders.

The Ilco 785-00-41 Cylinder Service Fixture provides plug holding positions for all four of the standard plug diameters, plus a position to hold a key-in-knob body, another to hold a standard mortise or rim cylinder body and one to hold an ICC core. The machined aluminum body of the 785 is sturdy enough to use the fixture free standing but mounting holes are included for bolting the 785 to a workbench. Cylinder disassembly, repining and reassembly are accomplished smoothly and efficiently in the 785.



The 786-00-8X fixture only holds the plug size most commonly used by today's lock manufacturers, but there are positions to hold seven plugs at one time. This allows mass production of pinned cylinders, especially useful when many cylinders must be keyed alike. It is also essential in keeping plugs organized when pinning cylinders for master key systems.

Lisle 92000 Drill Sharpener

The Lisle 92000 Drill Grinder is an affordable drill bit

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sharpener with web thinning and split point capability. It and the model 91000 are made in the USA at the Lisle factory in Clarinda, Iowa. The 92000 sharpen drill bits from 1/8" to 1" including cobalt, high-speed steel, straight or tapered shank and flat bottom drills.

The unit, which sets up in minutes, sharpens drills so they work like new. The machine adjusts to grind point angles from 90 degrees to 180 degrees and grinds lip clearance from 5 degrees to 15 degrees.

This sharpener creates split points and thins webs, which is a feature you usually won't find in a model in this price range. The unit is bench mountable to create a sturdy work surface. The sealed motor keeps the unit free from dirt, grime and shavings for a long life.

Slide Lock Z-Tool

Only these two tools are needed to open 65% of all vehicles sold since the 1950's. The Z-Tool was first invented in 1986 and was soon patented. It was built from spring steel which soon was upgraded to a thinner, harder stainless. The stainless does not become soft after constant use. This is an important benefit for such a versatile tool. It opens both vertical and horizontal equipped vehicles.

Both the Z-Tool and it's sister, the Inverted Z-Tool, come with their hooks milled out inside so as to allow sharp edges to dig into the target linkage allowing no slippage when moving even the stiffest of lock systems to their opened position.

Having a long end and shorter end allows for various linkage locations. The tools also come with depth guides to locate those many modern models with small elusive targets which otherwise would have the lockout technician fishing endlessly. If that's not enough, there is the Z-Tool manual, originally written for the Z-Tool alone, this manual is now in it's 14th edition and covers all lockout situations using the 12 tools of the Z-Tool System kit in order to open all models.

Time Saving Cart for Security System Contractors

Security system contractors can save time and money with a handy new rolling tool cart holding all tools and hardware necessary for efficient installations. The cart contains all hand tools, connectors, fasteners and mounting hardware for installing access control, alarm and CCTV systems. It eliminates the bane of our business – the time wasted dashing to the hardware store for a ten-cent connector to complete a $50,000 job. The cart includes everything you need to do what you want to do.

The complete Security Cart contains five kits: A Tool Kit, CCTV Kit, Mounting Hardware Kit, Machine Screw Kit and a Fuse and Wire Termination Kit.

The cart itself, called a Tool Kaddie, is a stylish, sturdy polyethylene toolbox on a dolly that contains all five kits. Tool Kaddie is lockable, sleek and compartmentalized. It resists pilferage, projects a professional image and keeps all tools and parts organized.

LAB Pin Kits

LAB has two institutional and commercial pinning kits, which were designed for and by institutional locksmiths. The kits and LAB brand pins are for the BEST A2 System and the Corbin Russwin System 70 DH and Z Class. Both come in a specially-designed kit with a metallic chrome finish and contain a Dual View pin tray in which pins are enlarged and printed under the clear plastic tray, both above and inside the pin pockets for easy viewing at all angles.

The seal tight cover prevents pins from leaking. The BEST kit contains all original design pins for the A-2 system; the Corbin Russwin kit contains all original design pins for "509" and "552" plugs. Both kits contain brass top pins, nickel silver bottom pins, springs and caps.

Lockmasters™ Pullmaster Safe Deposit Lock Nose

Lockmasters™ Pullmaster (LKM3000) is a safe deposit lock nose puller designed to make pulling the nose simple, fast and professional. The Pullmaster allows the technician to quickly pull noses and open locks by virtue of its compact inline construction. The tool eliminates the need for three or four separate parts to pull the nose.

The tool operates by screwing the stainless steel screw in the nose, pushing the ratcheting torque nut down and applying pressure to extract the nose of the lock. The Pullmaster Kit comes with a Mosler nose puller component and an attachment to bypass the Diebold 175-50 lock with no damage to the lock.

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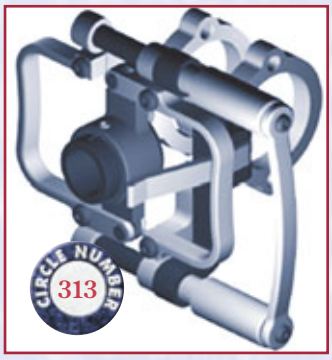
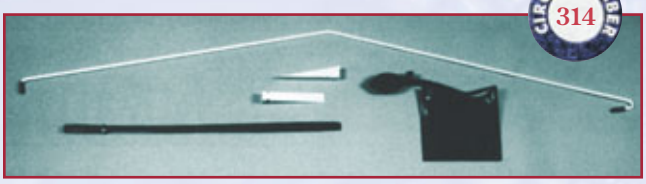
LockTools.com Wild Jig

The Wild Jig by LockTools.com is the worry free lock installation tool for professional locksmiths. Many lock installation tools have complicated clamp systems, spacing plates, and multiple set-up requirements. Add the weight and size of the jig, and set-up can require 10-15 minutes. Designed by a locksmith for locksmiths, the Wild Jig solves set-up headaches for good. The Wild Jig reduces set-up time to seconds, is accurate, rugged, and comes with a limited lifetime warranty.



LTI Unlocking System

The LT-130 Door Unlocking System from Lock Technology Inc. easily opens most vehicles on the road today without entering the door panel. This system includes the LT-125 Easy Access Door Unlocking Kit and the LT-275 Inflate-A-Wedge. The kit includes a 54-inch fluorescent green Easy Access Door Unlocking Tool; two LT-271 plastic door wedges, and the LT-100 Plastic Slip Jim. The system comes individually packaged in a custom Kraft cardboard box.



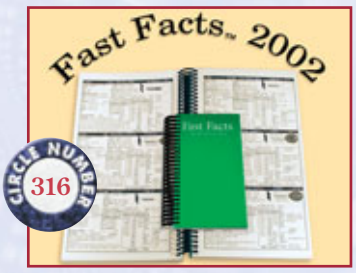
MCR Kit

The MCR Kit from McCoy Productions removes both vertically and horizontally mounted door lock clips, on door locks that are separate from the door handle and use the common horseshoe style door clip. Car door locks can now be opened without removing the panel. The kit can be used for rekeys, making keys for cars without glove compartment locks and many imports.

The kit contains two stainless steel clip removal rods, a rubber coated magnet, a finished wood door wedge, five sheets of round black plug labels, five horseshoe door clips and an instruction sheet, which show several alternatives for removing hard to access horizontal lock retainer clips.

Sieveking Fast Facts

The Fourth Edition of Fast Facts is now available from Sieveking Products Co. Fast Facts is an encyclopedic index of auto and motorcycle key making facts and lists nearly 2,700 models from 1960 through 2002, with 380 auto key plates and 128 motorcycle key plates. The fourth edition is spiral bound to lay flat and is available in two different sizes. The picket size is 3-3/4" x 6-1/4" and the desk size is 6" x 11".



The new Fast Facts has an expanded motorcycle index and new NGS and PATS Transponder protocol tables. The expanded "Helps" section has the latest "Transponders," the newest key number, code series, and step by step transponder originate, duplicate, and emergency start methods. The Helps section has doubled over the 2000 Fast Facts.

ToolPak HandTruckPak

The worlds first hand truck organizer that gives you a hand.

HandTruckPak by Paktek Inc. has places for the tools you need close at hand. Pocket and panels all around fit everything you could need with your hand truck. Places for clip boards, tape gun, pliers, wrenches, screwdrivers, spare parts, work orders, cell phone, radio and more. With HandTruckPak take your tools and your project in one easy step.

HandTruckPak features a sleek zippered design that holds

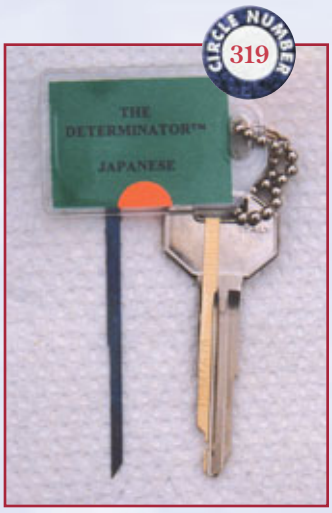
it snugly to hand truck. It's made from heavy-duty nylon for years of service. Pockets on both sides organize a variety of items. Pocket sizes range from clipboard, tape gun, to utility knife or marker size. This is a perfect complement to a hand truck and it doesn't interfere with its operation.

Milwaukee Power-Plus™ Cordless Driver/Drill

This powerful driver drill features a rare-earth motor developing 280 in/lbs maximum torque. The drill has a pistol grip handle with a soft-grip pad for comfort as well as dual range, and variable speeds of 0-450 RPM and 0-1250 RPM. It's reversing, and has a 19-position clutch. Other features include a 1.7 amp battery and a 1-hour, 115VAC charger. A driver/drill, two battery packs, a charger, and an impact-resistant carrying case are all included.

The above item can be found in the latest edition of the Jensen Tools catalog.

The Determinator™



The Determinator™ tool count is now up to 39! This automotive lock-decoding tool has become an essential part of the automotive locksmiths arsenal of tools. Used properly, a key can be generated for an automobile in just a matter of a few minutes. This tool will enhance the impressioning skills of most locksmiths as well.

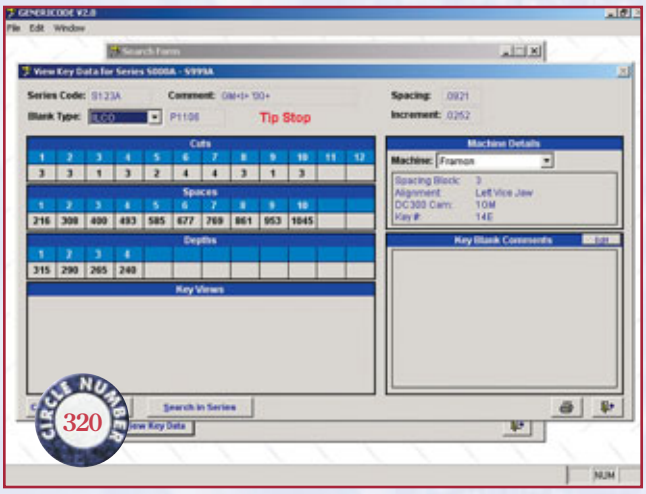
BMW, Chrysler, GM, Ford, Honda, Hyundai, Mitsubishi, Isuzu, Kia, Mazda, Nissan, Infiniti, Saturn, Toyota, VW, Volvo and Mercedes are just some of the makes covered.

Genericode Me™ by Framon

Genericode Me™ is a new windows-based code retrieval program and much, much more. In addition to having the largest code database available to today's

Continued on page 26

Continued from page 23



locksmith, the program also has many features other code programs charge extra for. In addition to searching by code number, the user can perform any of the following:

- Vehicle Lock Search: Enter the make, model and year
- Original Manufacturer Search: Enter the lock manufacturer
- Cycle/Boat/Airplane Search: Search by make
- Key Blank Search: Enter the blank number & find applicable code series

Padlock & Utility lock searches are also available. Once a code is shown, the user can print the information to take to a job site.

Genericode Me™ allows you to enter the type of machine you are using in a setup program. All key cutting information shown will pertain to that machine. The user can also enter a company name to be shown on printouts. A preferred key blank can be selected and shown whenever blank information is given. Genericode Me™ works on Windows 95 and above operating systems.

Klein Tools Side-Cutting and Diagonal-Cutting Pliers

Klein® 2000 Series® line of cutting pliers, that includes both side-cutting pliers and diagonal-cutting pliers, are designed for heavy-duty use in cutting ACSR, screws, nails and most hardened wire.

The innovative 2000 Series features ultra-durable, induction-hardened cutting knives that have been specially designed and heat-treated. They are built to cut a variety of tough materials without damaging the blades. Other Klein features include custom-made U.S. tool steel; a hot-riveted joint to ensure smooth action with no handle wobble; and a combination polished and black oxide finish.

The Klein 2000 Series NE-type side-cutting pliers feature a high-leverage design for 46% greater cutting power than standard side cutters. The knurled jaws are designed for sure gripping action, and the unique tempering of the handles helps to absorb the "snap" when cutting wire.

The Klein 2000 Series diagonal-cutting pliers feature a high-leverage design for 36% greater cutting power. Their short jaws with beveled cutting edges allow close cutting of wire. Two models are available: one with and one without a 13-degree angled head for work in confined areas. Measuring 8" in overall length, both models are available with either hand form-style handles that are plastic-dipped or state-of-the-art Journeyman™ handles.

Major Manufacturing Door Totes

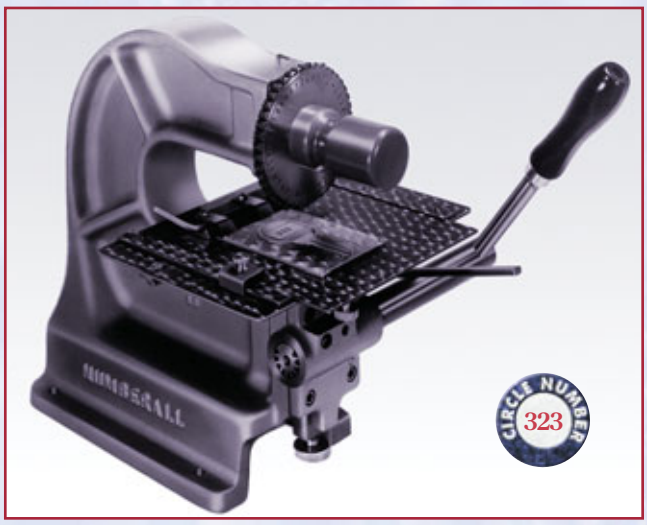
You've asked for help, and Major Manufacturing has answered the call, with the announcement of their two new Door Totes.

The Door Tote is the perfect partner for any solo door operation. It's so easy to use, and it provides a valuable measure of safety on the job. Say goodbye to the old days of throwing your back out in a futile attempt at moving a door on your own, or damaging your customer's expensive property by trying to "walk" a door out of the way.

The DT-100 Door Tote disassembles into three smaller components for convenient storage in your service vehicle. Assembly of the unit takes seconds, and you're ready to mobilize any door up to 1-3/4" thick. Their compact model, the DT-200, comes as a single piece and provides horizontal movement of the door unit. Both Door Tote models are lined to avoid scarring of the door surface and come equipped with pneumatic tires for those occasions when the job site is littered with debris.

Numberall Simplified Key Marking

A line of specialized key marking equipment by Numberall Stamp & Tool Co., Inc. is ideal for hotel and motel industries where large quantities of key must be



quickly stamped with identifying numbers and letters. The equipment ranges from the economical Model 23 Typeholder to the Model 137 motorized benchmarking press. Included is the Model 40B (shown) which features a large easy to read dial and a carriage table which automatically advances after each impression.

Custom made key nest which fit into the presses simplify the marking operation even more. Simply drop the key into the nest and make the impression. Every key is marked in exactly the same place.

Keedex Tamper Resistant Screwdriver

The Keedex Tamper Resistant Screwdriver comes with eleven interchangeable tips. It includes the following tips: six tamper resistant torx tips (T10, T15, T20, T25, & T30); three tamper resistant hex tips (5/32", 3/16", & 7/32") and two spanner tips (#6 & #8). All of the tips fit into the screwdriver's storage handle. Keedex also carries tamper resistant screws that are specifically suited to the needs of locksmiths.

Steck BigEasy "GLO" Kit

The BigEasy "GLO" Kit from Steck is the complete Lockout Tools Kit for all cars and light trucks. Simply insert the inflatable EasyWedge at the upper rear corner of the door and reach in with the BigEasy Tool to actuate the interior button, slide or handle to unlock the door.

The BigEasy "GLO's" high visibility is easy to see through tinted glass and in low light conditions. Since the

BigEasy Tool never enters the door cavity, there is no danger of damage to interior linkage or wiring. And everything is visible to the operator so no extensive training is required.

PRO-LOK LT300 The Key Check

If you've seen this product, you may have already said, "Now why didn't I think of that?" The simplest ideas make some of the best tools.

You're at the counter and a customer hands you an uncommon key, requesting a duplicate. If they only had the lock with them, you could try possible keys from your board until you found one that fit in the keyway. The "KEY CHECK" makes a temporary profile or "keyway" of virtually any lock. This tool is especially great for determining those difficult sectional keyways.

Simple to use: Pull the 110 stainless steel fingers, insert a key blank, slide the fingers snug around the key, filling in any open areas, tighten the locking screws and remove the key. The KEY CHECK will allow you to replicate the keyway on the customer's key and verify that the blank you choose will enter the keyway. Or, you can match the profile in the book, because the profile you see is the profile illustrated in most key blank catalogs.

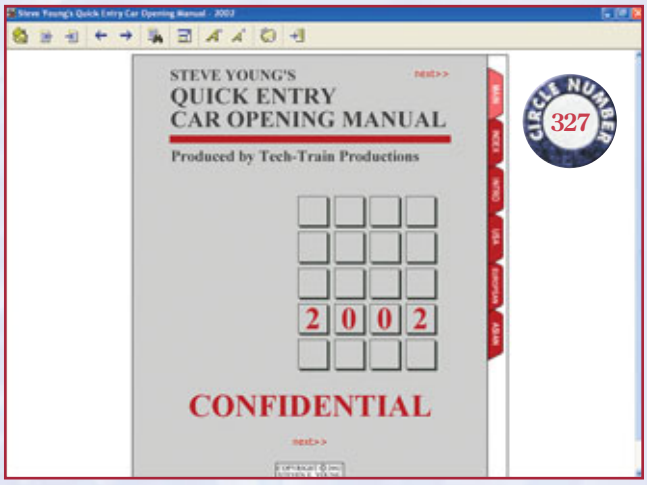
CIRCLE NUMBER 326

Its as easy as 1-2-3.

Quick Entry Opening Manual on CD

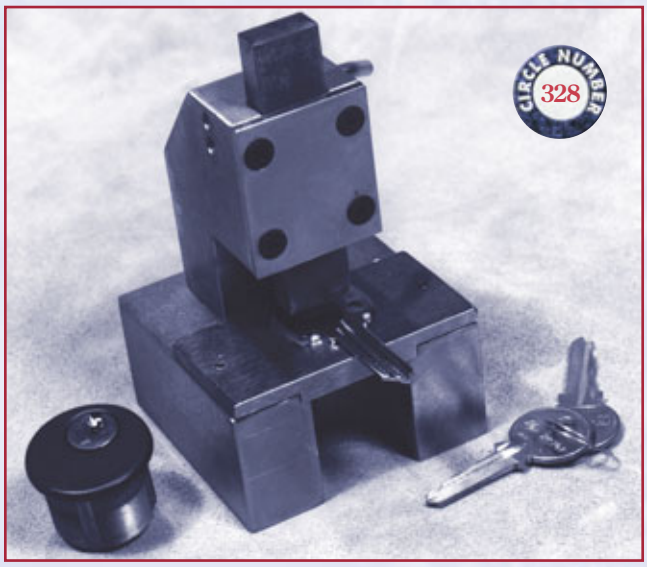
Steve Young's Quick Entry Car Opening Manual on Disk is available from Tech-Train Productions. This Windows™ based system gives the user all of the standard features of the "Quick Entry Manual" in a lightning-fast browser format. The software will run on any version of Windows™, and can be installed on two computers with no additional charge. Authorizations for additional computers are available at a nominal charge. Yearly updates for this software will be available at the same time that the printed updates come out.

While pricing for the updates has not yet been established, it will definitely be less than the price of the printed updates.



AccuMark Key Marking Tool

The AccuMark 1 from AccuLock permanently imprints a custom message into keyblanks and mortise cylinders. Use this tool on any job and your customer sees your advertising message every single day. The tool is unconditionally guaranteed by AccuLock for two years.



HPC's New Lever Handle Remover LHR-100

HPC's Lever Lock Handle Remover is designed to quickly remove locked lever handles for servicing. It is ideal when picking the lock is not an option. This tool allows you to remove both the lever handle and the cylinder. To use, place the tool's specially designed hub over the lever, and using an easy procedure of manipulating a few bolts and screws, you are able to remove the handle, open the door, and service the lock. Simple to use with amazing results!

ASP TCL-1

ASP, Inc. has one machine to program transponder keys for Nissan/Infiniti, Mitsubishi/Chrysler/Jeep, Volkswagen/Audi, Cadillac Catera, and some models of Ford USA. The TCL-1 can be used for programming new keys when all the keys to the car are lost, plus duplicate encrypted keys that cannot be cloned. New programs are currently being developed to service additional vehicles not currently serviced by existing programs. The manufacturer is fully committed to offering a versatile top quality product at an affordable price. The TCL-1 is available from all ASP distributors.

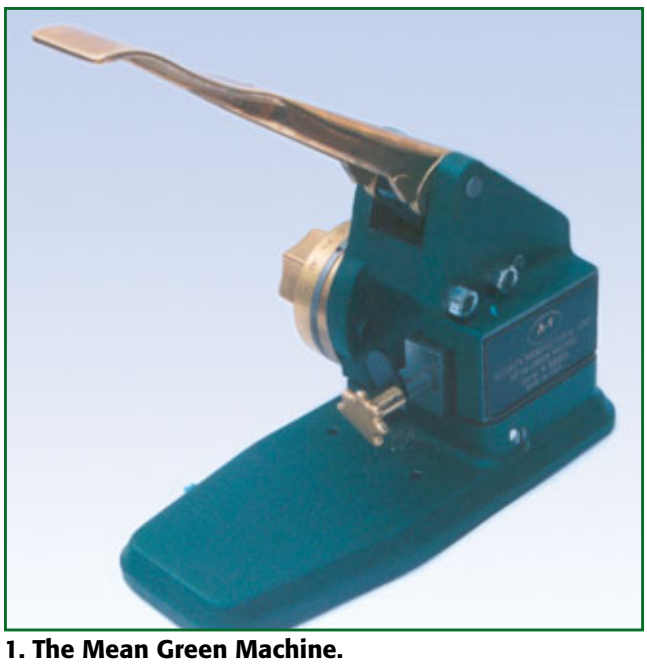
For more information, visit the website at: www.tcl.com, or contact your ASP distributor. TNL

by
Jake
Jakubuwski

The A-1 MEAN GREEN MACHINE and Other Cool Stuff!

A-1 Security Manufacturing has a broad line of interchangeable core tools for almost any need. The Mean Green Machine is just one of those tools. *(See photograph 1.)*

If you've heard, as I have, that the Mean Green Machine is simply a differently painted I/C core key combinatory, it isn't so.



1. The Mean Green Machine.

When you look at *photograph 1*, you might think that you're simply looking at another version of a small format combinator. A valid observation as far as external appearance is concerned. Yet, even comparing external appearances you will find that there are major differences.

Photograph 2, shows the flatter, more user-friendly punch handle on the Mean Green Machine. That handle alone sets the Mean Green Machine apart from others, especially when you find, as I did, that you can punch out a whole lot more keys with a lot less fatigue and carpal tunnel stress than other combinators require.

Photograph 3, is of the depth wheel in great detail. Take note of how clearly incised the numbers are. Even when the brass finish begins to darken with age, you'll be able to read the cuts with no problem. The large knurl on the wheel makes the wheel easy to turn and the positive stops at each number ensure proper positioning of the carriage beneath the jaws. Those features also guarantee that you are going to cut as perfect a key as is possible to cut every time.

Photograph 4, is the carriage for cutting KeyMark keys. Did I mention that the carriages were interchangeable?

If you're like me, I sell KeyMark Best and Falcon. The Mean Green Machine, with interchangeable carriages allows me to process both formats through one machine! That represents another savings and makes—in my opinion—the Mean Green Machine an even better investment.

How many carriages can you buy for the Mean Green Machine?

A-1 currently make carriages for traditional Best, Falcon, KSP, Arrow, and Best-type small format keys. Carriages are also available for Arrow Flexcore and, as mentioned earlier, KeyMark from Medeco.

Continued on page 32

2. The flatter user-friendly punch handle.

Continued from page 30

3. The depth wheel.

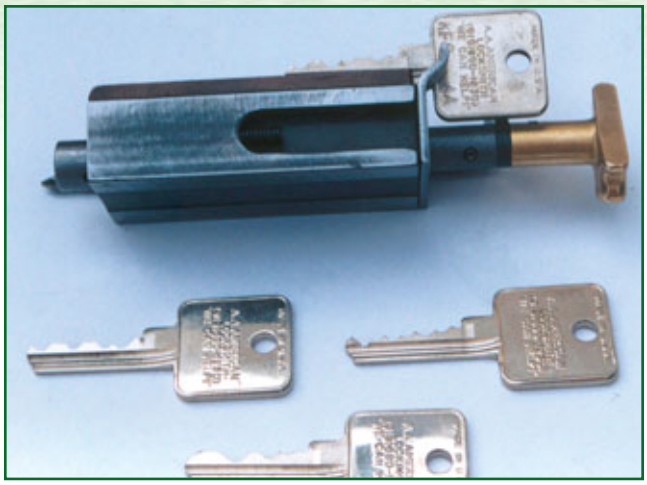
While I have a carriage out, I want to show you the spacing adjustment. Although the Mean Green Machine comes pre-assembled, pre-adjusted and ready to rock, there might be an occasion, or two, when the spacing gets out of kilter. A simple adjustment with two Allen screws will put you right back on track.

I don't know how often you might have to adjust the spacing on the Mean Green Machine, but I've been banging mine around in my van and only made my initial adjustment when I first received the machine. If you need it, it's there. I figure chances are better than fair that you won't have to make any adjustments to yours.

Have you ever cut an I/C core key and realized that one or more of the depths may have been cut too shallow? Then you re-cut the key to the proper depth and find that there's a glitch when you try to operate the core? The problem stems from the fact that when you re-cut the key, the jaws on your machine would not properly grip the key to keep it in the same alignment as when you cut the first, shallower depth.

When it comes to Interchangeable core tools, I wouldn't hesitate to recommend that you take a close look at what A-1 has to offer besides the Mean Green Machine.

One of the major obstacles for any beginner, in any facet of our trade, is the cost of getting the necessary equipment, supplies and materials to get started in that particular area. Interchangeable core sales and service is



4. Carriage for cutting KeyMark keys.

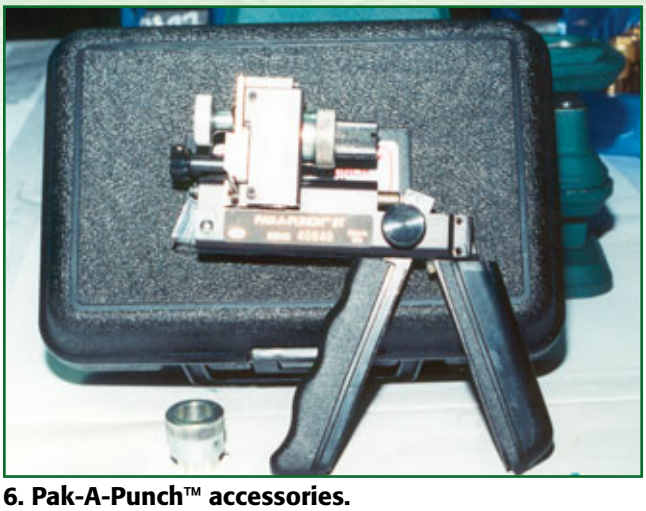
5. PAK-1C, Pak-A-Punch™.

really not much different. On the plus side of the equation, A-1 offers I/C service tools to the beginner and experienced locksmith alike at a price, while not bargain basement in nature, is not untenable.

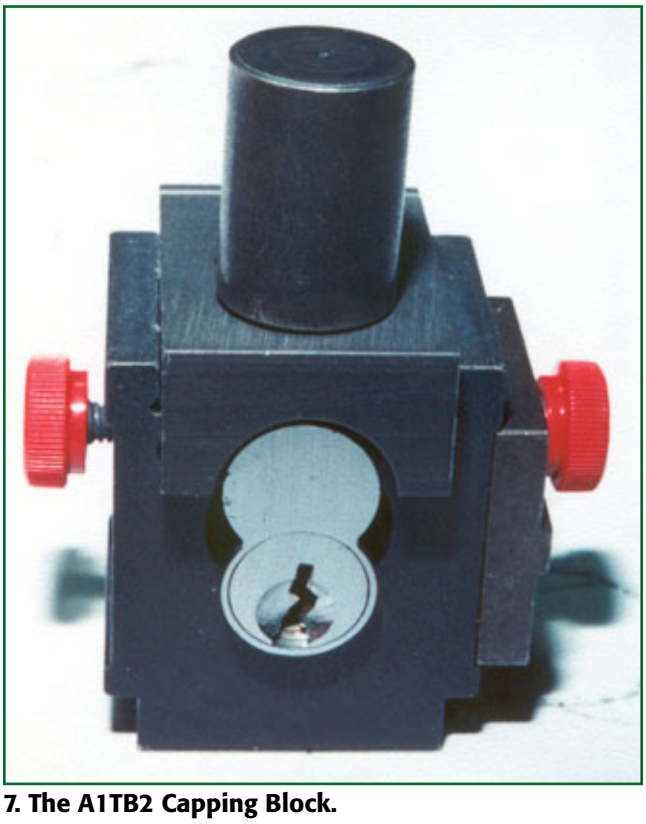
If you're just starting out or want to increase the amount of work you do in I/C core servicing, you're going to need certain tools that will make your job a whole lot easier than if you didn't have them. I'm not talking about key blanks, cores, pins, housings, retainer caps and springs. I'm talking about tools to cut keys, fixtures to hold the cores during the pinning operation and to cap the cores when they're pinned.

Starting out, you may not be able to afford—or want to spend the money—for a Mean Green Machine. A-1 also offers their PAK-1C, Pak-A-Punch™, Interchangeable Core Key Punch. *(See photograph 5)*.

The Pak-A-Punch is portable and allows for precise, on-the-money cuts every time. The only drawback I've found on the PAK-1C is when you are trying to punch a 7, 8, or 9 depth. If your hands are small or your grip strength is less than it used to be, it might be necessary to first cut a 5 and



6. Pak-A-Punch™ accessories.



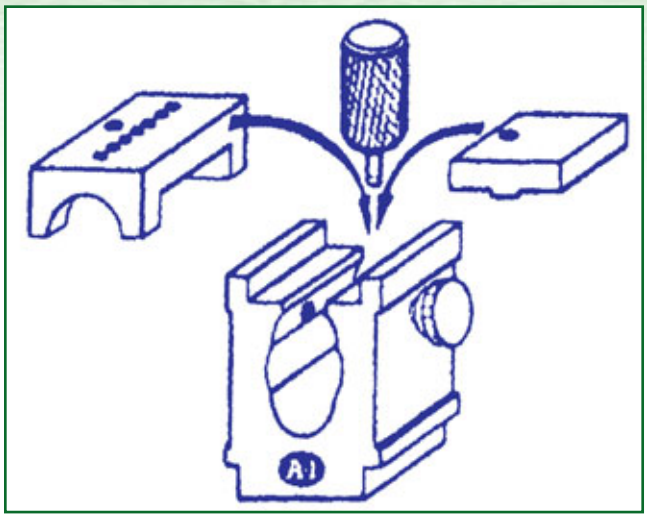
7. The A1TB2 Capping Block.

then the deeper cut. However, like the Mean Green Machine, you don't have to worry about losing any accuracy when you do a double cut in the same position.

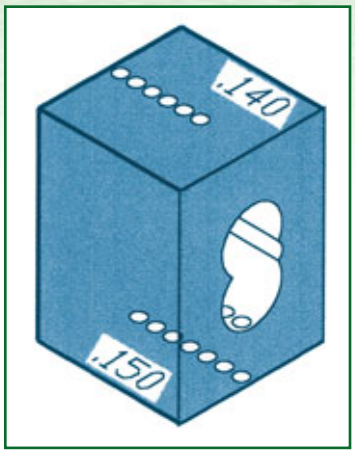
The Pak-A-Punch also comes with its own carrying case, a Best/Falcon decoder for decoding the A-2, A-3 and A-4 series keys to factory code specifications. *(See photograph 6.)*

You will also need, or should have, the A1TB2 Capping Block, which is really a compact I/C core workstation *(see photograph 7)* that not only allows you to cap Best and Falcon style cores but can be used as a pinning fixture as well. *(See photograph 8.)*

If you're capping both Best-style and KABA® Peakes, you might want to invest in the very versatile A1TB4, or Duo Block. *(See photograph 9.)* The Duo Block will cap both .140 and .150 configurations.



8. It's a pinning fixture as well.



9. A1TB4 Duo Block.

10. Ejector punches.

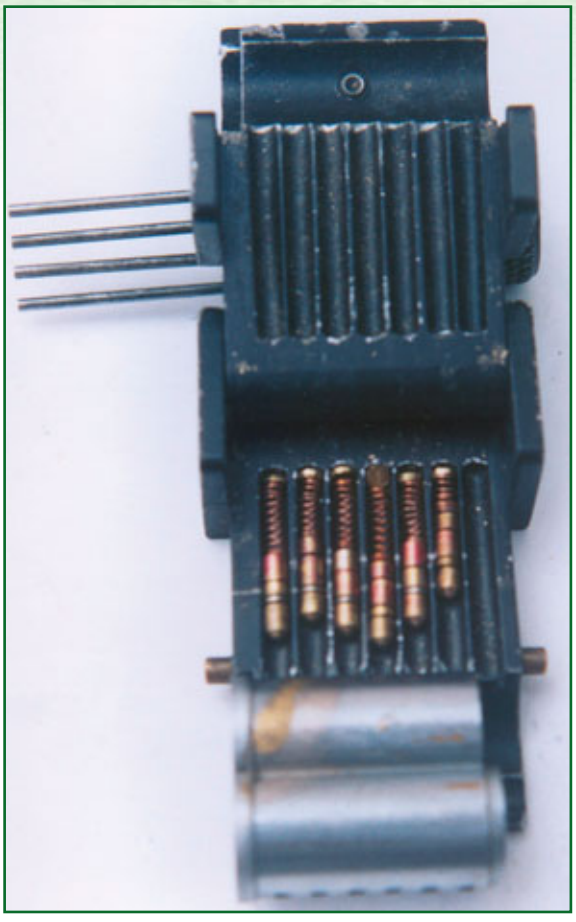
11. The Block (TB1).

Finally, as far as "must haves" is concerned, you need an ejector punch to remove the pins from cores you're going to repin or service. The TBIP is a single chamber ejector punch and will serve you very well. However, I recommend the A1TBMP Ejector Punch since it will eject the pins in four chambers at a time, which makes the TBIP a real timesaver at very little extra cost. *Photograph 10*, shows both of these ejector punches. The TBIP is on the left and the A1TBMP is on the right.

Those five tools are, I think, as necessary to your I/C core service business as oxygen is to breathing.

There are two other A-1 I/C core tools that I want to mention here. One is The Block (TB1). The Block is used to determine the pin depths in a core. *(See photograph 11.)* It is useful for determining master keys, core keys and change keys when any of those factors may be unknown. *Photograph 12*, shows the Block opened to allow me to read the pins captured from each chamber of the core.

For the beginner or the seasoned pro that wants to really shine in the I/C core service arena, A-1's innovative CapSaver Capping Press (CAP5) is the answer for the shop, institution or mobile locksmith that is really serious about capping lots of cores in a hurry. The CapSaver Capping Press is used not only by locksmiths but also on the assembly lines of various I/C manufactures. *(See photograph 13.)*

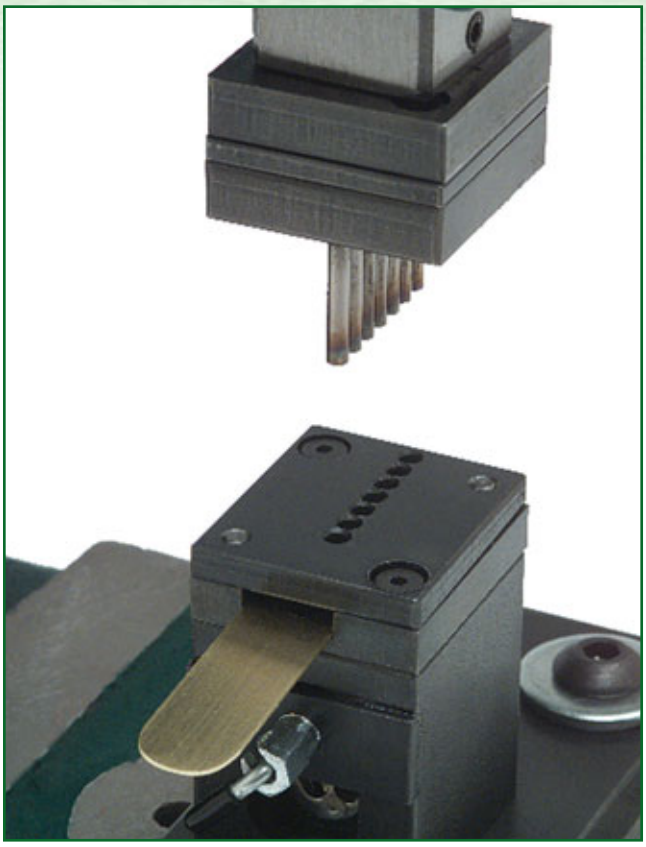


12. The Block opened.

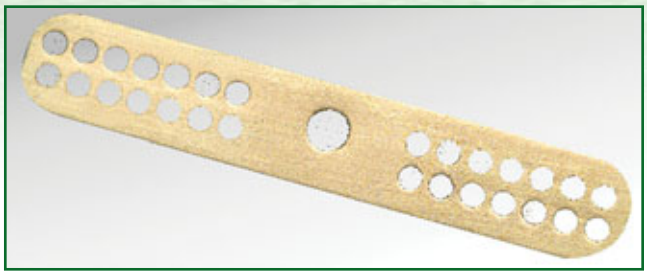
The CapSaver Capping Press—unlike other capping tools that use individual machined caps—caps cores by using a thin brass strip that is placed under the arbor and literally "punched" in to each chamber. *(See photograph 14.)* Each strip will cap four cores as can be seen in *photograph 15*. Instead of capping one chamber at a time, The CapSaver allows the locksmith to cap up to seven chambers in the time it might otherwise take to cap one.

That's an extraordinary time-saver and makes the CapSaver Capping Press another cost-effective tool for the locksmith that wants to increase their pinning and capping capabilities, while at the same time saving on labor costs. In

13. The CapSaver Capping Press.

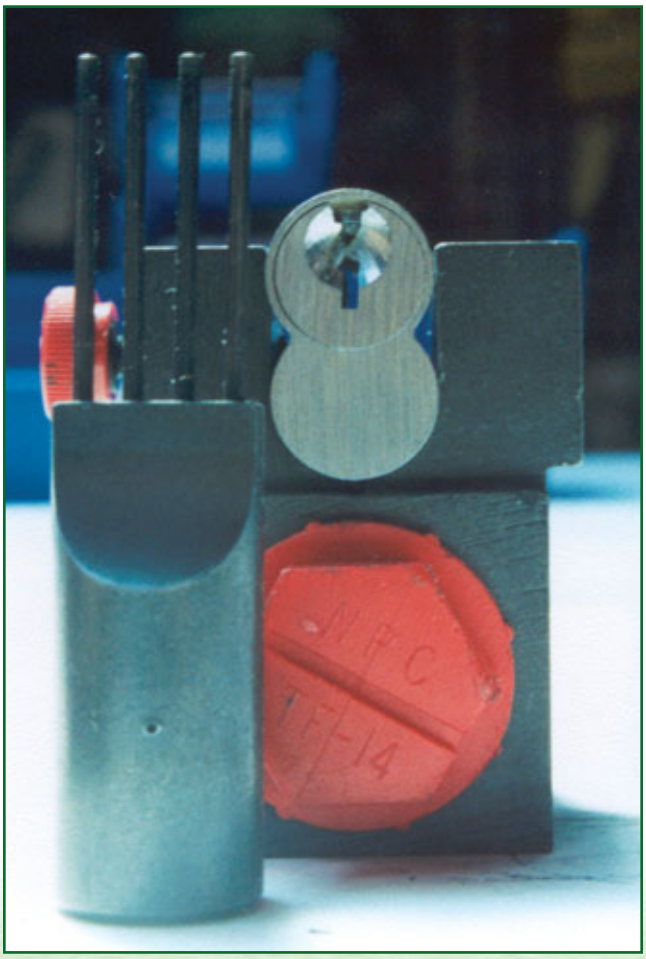


14. The CapSaver Capping Press caps cores by using a thin brass strip.



15. Each strip will cap four cores.

17. All the debris from the cores is contained inside the block.



16. The Dumping Block.

addition, each cap is perfectly seated in its respective chamber. No more tilted caps, loose caps or caps that are seated so deeply that they interfere with the operation of the core.

The last tool that I'm going to show you the A1TB3Dumping Block. The Dumping Block, although not absolutely required for I/C core servicing, does give you a handy clean way of ejecting pins from I/C cores. *(See photograph 16.)* Simply insert the core in The Dumping Block as shown and use the Ejector Punch to push the caps, slides, springs and pins into the Dumping Block. All the debris from the cores is contained inside the block and not all over your workbench. *(See photograph 17.)*

So, whether you're new to Interchangeable core service or have been doing it for years, think about A-1 for your I/C core service tools. The tools that I mentioned in this article are not the only I/C service tools that A-1 Security Manufacturing has to offer you. Visit their web site at them and see all of the I/C service tools, general locksmith tools and automotive tools that A-1 has to offer. They really are a locksmith-oriented company.

For more information contact:
A-1 Security Mfg. Corp.
3001 West Moore St.
Richmond, VA 23230
Phone: (877) 725-2121 or (804) 359-9003
Fax: (804) 359-9415
E-mail: fmcc@demanda1.com
Web: www.demanda1.com
Circle 264 on Rapid Reply. TNL

MARKAR Hinge Solutions

by Jake Jakubuwski

This article is another one of my "alternatives." More importantly, it is another aspect of my theory of *"Total Door Service."* Only this time, I'm going to rattle some cages a little bit when it comes to that perennial question: *"How can I get more business?"*

If you're willing to look beyond the locks on a door, that's an easy question to answer.

Most often, *"more business"* is right there on the door that you are re-keying the lock on, or adjusting the strike by filing the opening a little wider! More business is yours for the taking if you're willing to look at the total door as a revenue source rather than the locks, and maybe the closers, that are on the door. Look at the frame, the hinges, the crash chains, the door viewers, the exit alarms, the panic devices, the hinges. Did I already say, hinges?

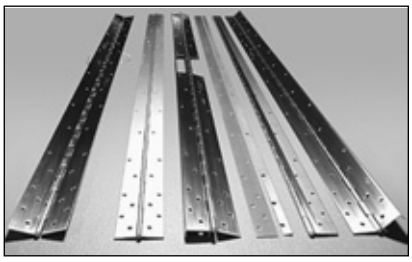
Hinges are one of the leading causes of door malfunctions. The latch that won't align with the strike is—most often—a problem caused by a bent, twisted, sagging or broken hinge. The door that won't close all the way without being forced is often the victim of the hinge that had a broom handle put between the leaves to keep the door open. (Although, that problem can also be traced to a malfunctioning closer, loose threshold or trash and debris along the bottom edge of the door or between the door and the jamb.)

Simply put: Hinges are a chronic source of door problems. That translates to a constant source of profits for the locksmith that's willing to look beyond the lock on the door and offer another service to their customer.

Consequently, it makes sense to look at hinges—along with closers, operators and other door components—as an alternative service to your locksmithing services since you're already on site. If you're going to look at hinges, Markar hinges are hinges worth taking a look at.

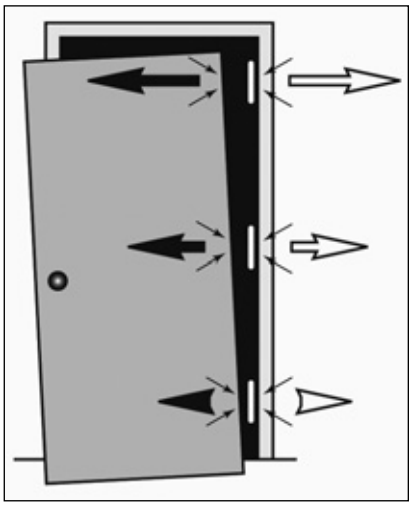
Markar has, since its founding in 1969, led the way in the development of continuous hinges. Markar's 300 Stainless Steel and 200 cold rolled steel hinges were the first fire-rated continuous hinges to enter the marketplace. Markar also introduced the first aluminum continuous pin and barrel hinge in the industry in 1983. Markar hinges are the perfect answer to the hinge needs and requirements of commercial, institutional, recreational and industrial hinge users.

Markar is an industry leader in the continuous hinge market for new construction and retrofits. With a wide variety of hinge styles and finishes, Markar has a world of experience that you, the locksmith and installer, can benefit and profit from. *(See photograph 1.)*



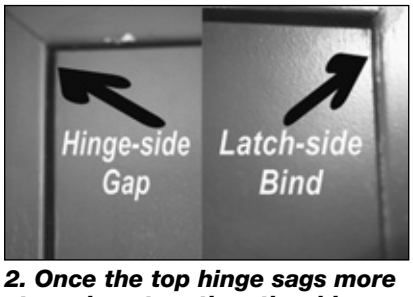
1. Markar is an industry leader in the continuous hinges.

So why mess with hinges anyway? In particular, why mess with continuous hinges, or pivot hinges, or restroom stall hinges? That's easy to answer: Because they're there to be messed with—a ready market for you to tap and make money in. Because you are already there! Is that simple.



A. Exemplifies the stress that is put on a standard 3-butt hinge.

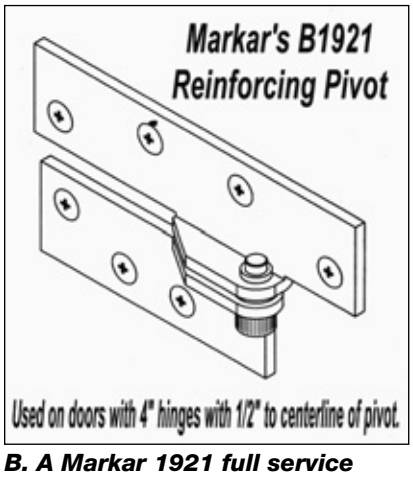
Illustration A, exemplifies the stress that is put on a standard 3-butt door installation. As traffic, weight, wind and stress loads begin to take their toll on the hinges of a door; it is usually the top hinge that shows the first signs of weakness or failure. Once the top hinge sags more stress is put on the other



2. Once the top hinge sags more stress is put on the other hinges.

hinges. *(See photograph 2.)* If caught early enough, this problem can be corrected with either a Markar 1921 or a Markar 1923 full service pivot hinge. *(See photograph 3.)*

3. Markar 1923 full service pivot hinge.



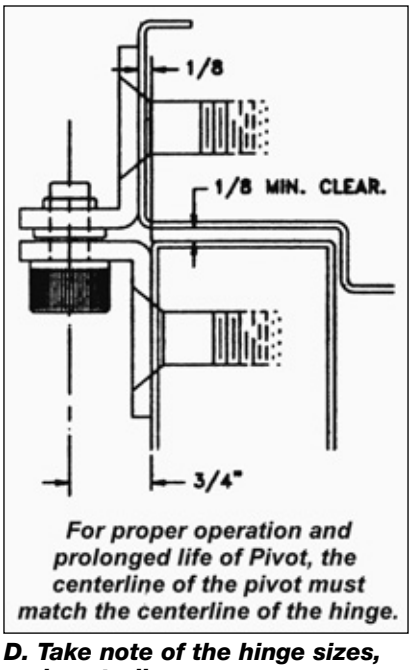
B. A Markar 1921 full service pivot hinge.

Illustration B, is of a 1921 full service pivot hinge. *Illustration C,* is of a 1923 full service pivot hinge. Take note of the hinge sizes, and centerlines that these two items are designed for. *(See illustration D.)* If you don't use the proper size pivot in relation to the size of the existing hinge, you will put the door or the pivot in a bind. That will eventually put undue stress on the door or the pivot, which is the very situation that you are trying to correct.

Other than a full surface pivot hinge to counteract various stress factors associated with a door under severe operating conditions, full

C. A Markar 1923 full service pivot hinge.

surface, half surface or full mortise Markar hinges are available to you to cover a variety of configurations. That means you can respond to a



D. Take note of the hinge sizes, and centerlines.

greater variety of hinge problems and offer the customer valid, practical solutions to their hinge problems with a Markar hinges.

A continuous hinge helps stabilize the door by equally distributing load factors the entire length of the door and frame. Since load factors are equalized, the potential for a hinge failure or attendant door problem is minimized, if not eliminated. Instead of concentrating most of the stress on two or three heavy-duty butts, the weight of the door is supported along its full length—up to ten feet. That continuous support makes trouble-free door operation practically a given. In fact, it is virtually guaranteed because Markar continuous hinges are tested for over 1,000,000 cycles.

The ease with which one of these hinges can be installed is almost unbelievable. The following photographs show the procedure after an old door has been removed and a new door with a continuous hinge is

4. A new door set into proper alignment.

installed. *Photograph 4,* shows where my son and I are raising a new door (retrofit) into proper alignment with a

5. The finished installation.

Stanley Wonder Bar. *Photograph 5,* shows the finished installation of the door, less the locking hardware.

Photograph 6, shows a door with a Markar HG305 hinge on it and *Photograph 7,* shows the detail of a HG305 installation. Again, the installations of these hinges as illustrated here are simple, straightforward and effective.

A unique feature of the HG (Hinge Guard) 305 is the fact that it is adjustable. Adjustable? Yes, adjustable! Markar has developed a system they call "The Adjusta-Screw Fastening System." It is a fastener

Continued on page 42

Continued from page 40

6. A Markar HG305 hinge.

available on most Continuous Hinge Guard models that permit up to 3/8" width adjustment along the hinge side of the door. That full-length adjustment feature means that the door can be accurately squared in the frame!

In turn, whether it is a new door and frame installation or retrofit, you have more flexibility with Markar's Hinge Guard series of continuous hinges. Future adjustments—if necessary—can easily be made by the simple repositioning the Adjusta-Screw Fastener.

7. Detail of a HG305 installation.

The Adjusta-Screw feature allows you to compensate for poorly installed frames and jambs, or frames that have been twisted due to "settling" or other stresses.

Making the Adjusta-Screw concept even more enticing is Markar's adjustable lock-edge fastening products.

Markar's Edge Guards come in stainless steel, cold rolled steel and aluminum models. The stainless steel and cold-rolled steel models allow for up to 3/8" adjustment along the locking edge of the door. The aluminum version has a total of 1/8" adjustment.

Theoretically, if you were using a stainless steel edge guard on a door and an HG 305 continuous hinge, you could have as much as 1-1/4" of vertical adjustment available to you in the event that the frame was wracked, misaligned or twisted! How's that for problem solving?

Other unique Markar products are their 900 and 400 series continuous, spring-loaded hinges for toilet stall partitions, which are available in a variety of finishes and lengths.

8. A hinge on an interior, wood office doors.

Whether you need to install a hinge on an interior or exterior office door, Markar has it. *(See photograph 8.)* Or, if you need a hinge solution for a single exterior door on a metal warehouse, Markar has it. *(See photograph 9.)*

9. A hinge solution for a metal warehouse.

I've used numerous Markar hinges and products. I've installed literally dozens of full surface reinforcing pivots. I can only relate to you that my experience with these products has been good, profitable and satisfying.

For more information on Markar products, distributors and how you can benefit from Markar's engineering and hinge experience; call Markar at: 800 866-1688. Tell 'em: "Jake, told me to call!" TNL

LOCK INSTALLATION Jigs

by
Sal Dulcamaro, CML

When you install a lock, it is quite helpful if all of the holes are the right size and in the right place. If you are very careful and use the templates that come with locks, you can do a quality installation. If you want to do a precise lock installation, but dramatically decrease the amount of time required, it usually pays to have a reliable quality installation jig at your disposal. Installation jigs are available in a wide range of prices and quality, and the features included can vary dramatically.

If you deal mostly with doors that have already been drilled and prepped and rarely have to do the actual drilling of holes, occasionally taking the additional drilling time with a template (and no jig) may not be that big of a deal. The cost of a jig may be more than time saved. If you do quite a bit of drilling and door prep, however, it may be costing you money by not spending the money to buy a good jig.

An installation jig not only can speed up the job and reduce the time required for you to install a lock, but it can also improve the precision and accuracy of an installation. That part about precision and accuracy won't be measured just in time saved on a job, but in satisfied customers and positive referrals. There are quite a few different jigs made by various companies, but for this article I will cover only four. I will provide a general overview of features for one jig each from four different companies.

The A-1 Bulls Eye Installation Tool

Kwikset recently discontinued an installation jig they had been making for as long as I can remember. They replaced it with a newly modified design jig. If you are one of the many who liked the Kwikset original, A-1 may have what you want.

A-1 calls their jig the Bulls Eye installation tool for cylindrical locksets (#BUL-2). The jig is newly introduced and it has a relatively simple design and layout, not unlike the old Kwikset jig. Although it is very similar in overall appearance to the Kwikset jig, it has some fairly interesting refinements.

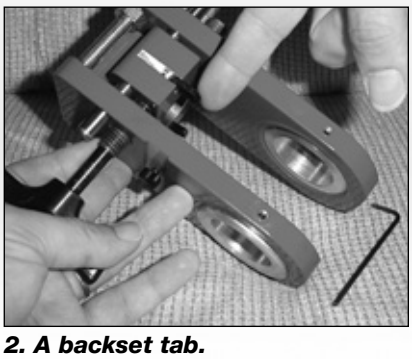
The A-1 Bulls Eye jig is shown with one of those refinements in evidence. *(See photograph 1.)* The Kwikset jig was set up for drilling a 2-1/8 inches diameter crossbore hole. It is likewise the size designed for the base A-1 jig. The Bulls Eye jig, however, includes special reducer bushings to convert to 1-1/2 inches diameter crossbore holes. In the photo, I'm holding one of the bushings while the other has already been installed in the opposite side guide hole. The bushings are secured in place with setscrews, which are tightened by the included Allen wrench.

Another refinement of the A-1 jig has to do with the backset adjustment. That adjustment has been simplified with the A-1 jig. I'm pointing to one of the backset tabs in *photograph 2.* In the current setting, with the tab extended, the jig is set to drill crossbore holes with 2-3/8" as the measured backset. When the tab is toggled back, the backset is switched to 2-3/4". *(See photograph 3.)* The backset adjustment is much faster with this jig than with the older Kwikset jig.

If you have the need to drill two sets of holes on a door (for an interconnected lockset installation), A-1 has a way to maintain precise spacing between the upper and lower sets of installation holes. With the addition of a special strap, two Bulls Eye jigs can be interconnected and used for drilling two sets of holes. In

Continued on page 46

1. The A-1 Bulls Eye.



2. A backset tab.

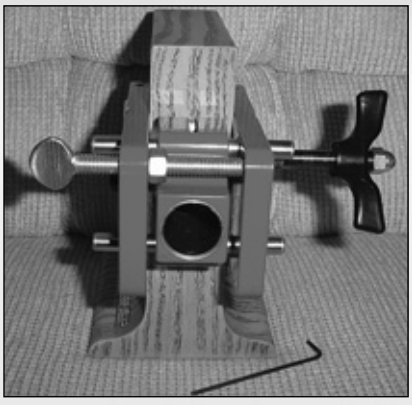
3. Backset toggle.

Continued from page 44

4. Slot where the strap seats.

photograph 4, I'm pointing to a milled slot where the strap seats, and to one of the screws that secures the strap to the jig. Different straps are available for different spacing patterns.

I used a lock mount to demonstrate how the jig is mounted to a door when doing an installation. *(See photograph 5.)* The jig is self-centering for the edge bore hole, although you may have to do some adjusting of the screws to account for door thickness. This feature is virtually the same as the old Kwikset jig. The old design Kwikset jigs are in short supply. If you preferred the earlier design Kwikset jigs to the newer version, you may want to check out the A-1 Bulls Eye.



5. Jig mounted to a door.

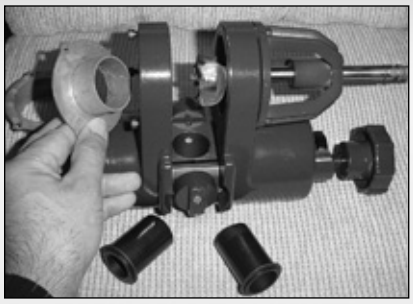
The Major HIT-44 Drill Master

The HIT-44 Drill Master is another interesting jig. Major Manufacturing builds the HIT-44 and it is one of the heavier jigs you will find for cylindrical lockset installations. It is a bit more complex because it can do some things that most other cylindrical lock installation jigs cannot do. Therefore you should carefully read the instructions before using it on a door. There are various accessories available that can be attached or detached from the jig. The basic jig

6. The Major jig and accessories.

itself and a number of different accessories are packaged in a variety of different kits. The cost will be higher the more accessories you have in a particular kit.

The Major jig and a number of accessories can be seen in *photograph 6*. By adding to or removing parts from the jig, you can make some alterations in the jig's layout and ultimately alter your drilling procedures. The shaft of a 1-1/2" auger bit is securely guided with a bushing on the right side of the jig. *(See photograph 7.)* I'm holding a part called the breakout plate. It has a 1-1/2" diameter hole and it is normally bolted in place to the jig on the left side. This setup is designed for use on wood doors. An auger bit should never be used on metal doors.



7. A 1-1/2" auger bit.

8. View of the jig.

9. One of the bushings.

A straight on view of the jig's left side can be seen in *photograph 8*. This time I'm holding the breakout plate for 2-1/8" crossbore holes. If you look closely, you can see the 2-1/8" auger bit straight through the hole in the jig. The breakout plate is attached with the three cap screws. When used for wood door drilling, the washers should be on top of the breakout plate and just under the cap screws. The auger bit goes from one side of the door all the way through to the opposite side. The breakout plate is intended to minimize splintering of the wood when the auger bit breaks through to the other side. If used for metal doors, the auger bit drill guide should be removed and breakout plates should be installed on both sides of the jig. In that circumstance, the washers should be under the breakout plate, followed by the breakout plate and then the cap screws. Drilling through metal doors requires that you drill inward from both sides (approximately halfway from each side) with a metal cutting hole saw.

There are removable edge bore hole bushings to give you the option of a 7/8 or 1" diameter edge bore hole. *Photograph 9*, shows one of the bushings ready to insert, and in *photograph 10* it has been snapped into place. There is also a 1/2" diameter bushing available (although not shown). I'm not entirely sure of its application.

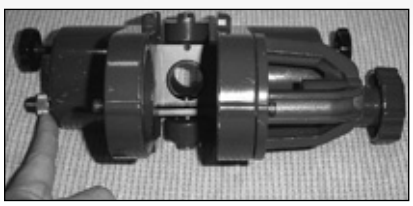
The backset adjustment is fast and easy. I'm grasping one of the backset space knobs in *photograph 11*. It will click stop and there is a matching part on the opposite side of the jig. In not more than a few seconds, you can switch back and forth from 2-3/8" to 2-3/4" backset and vice versa.

There are a number of adjustment screws found on the jig. *(See photograph 12.)* Some are for tightening on the door and some others are on the jig for shifting the edge bore position when you need to drill other than the actual center.

Major also makes a variety of strike locator and latch marking tools. *(See photograph 13.)* The locator tools are made of metal and come in both 7/8" and 1" diameter versions. The latch marking tools are convertible and can be switched to work with 7/8"or 1" edge bore holes. The Major

10. The bushing in place.

11. The backset space knob.



12. Adjustment screw.

13. Strike locator and latch marking tools.

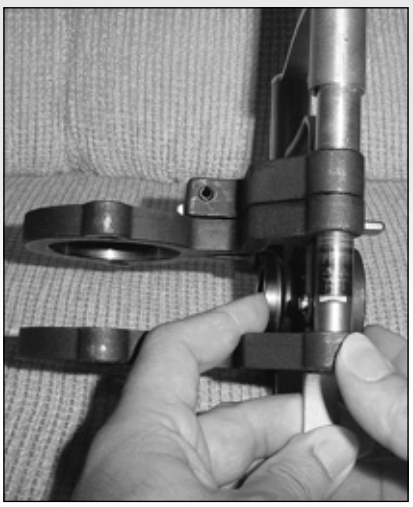
jig is a very heavy-duty tool and seems very versatile. Just don't forget to read all the instructions.

The Wild Jig from Locktools.com

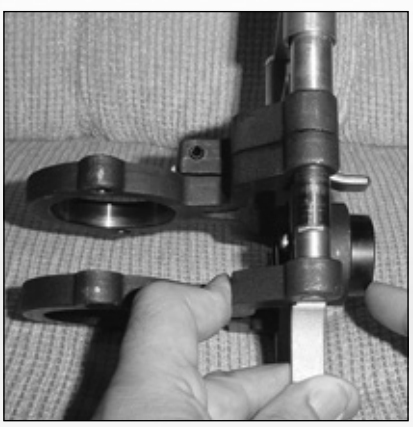
The Wild Jig is an interesting tool. I saw the original version of the tool more than a year ago and was quite impressed. It was the fastest acting and most efficient jig I had seen at that time. I tried it out on a few lock installations and it worked great.

A modified version of that jig was later introduced and called the Wild Jig II. The difference between Wild Jig I and II, was the addition of hole guides for the through bolts used in many commercial key-in-lever

14. The Wild jig.



15. The backset adjustment.

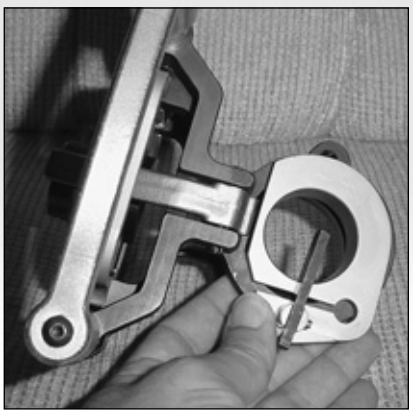


16. The 2-3/4" backset position.

locksets. It appears that the original version was discontinued and the second version inherited the unnumbered title "Wild Jig." The current version is shown in *photograph 14*. It is essentially the Wild Jig II with a few operational refinements and some additional features.

The backset is adjusted by pushing in or pulling out the center bushing. The jig is set for 2-3/8" backset in *photograph 15*. I'm pointing to the center bushing which

17. The additional through bolt guide holes.



18. Adapter set for a 2-1/8" opening.

sets the backset position. The center bushing has been moved to the right to switch it to the 2-3/4" backset position. *(See photograph 16.)* Positioning the center bushing to the proper backset can be accomplished in two seconds.

The Wild Jig is designed for installing cylindrical locksets. The hole guides are for crossbore and edge bore holes. The crossbore guide hole is standard at 2-1/8" diameter. If you look at *photograph 17*, you'll see the additional through bolt guide holes. They are just above and below the 2-1/8" diameter main crossbore guide holes. One of the new features is the 1-1/2" diameter crossbore adapter. I'm holding it and about to seat it into the jig. Toward the bottom of the adapter is a protruding pin which will seat into one of the through bolt guide holes to lock the adapter in place to the jig.

The adapter has been set into the 2-1/8" opening in *photograph 18*. The guide lever is vertical which is the unlocked position. It should be vertical when placing the adapter, otherwise the adapter will go in tight. The guide lever is rotated clockwise until it firmly seats on the

Continued on page 50

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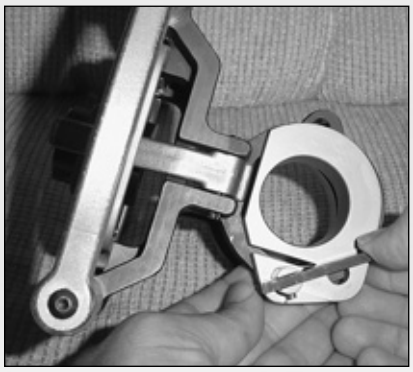
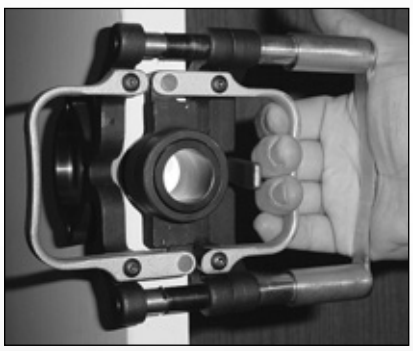
lever ledge and secures the adapter. *(See photograph 19.)*

So far everything we've done with the Wild Jig has been fast and easy. Placing the jig on a door to begin the drilling process is no exception. The carriage is spring loaded and self-centering.

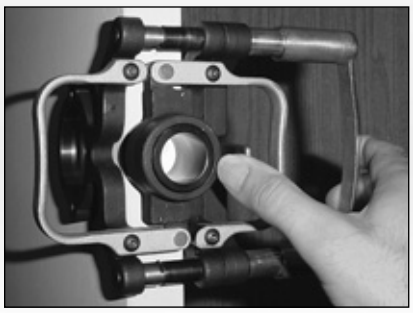
In *photograph 20*, I am pulling against spring pressure between the grip bar to the inner handle to expand the opening of the jig. The Wild Jig will open to a door thickness of almost 2-1/4". You can place the jig with one hand, but you'll maintain more control if you use both hands. Once the jig is properly positioned, release the handle slowly and the jig will grip to the door. At this point the jig is only gripping with spring pressure and it could shift if you tried to drill now. There is a locking lever on the jig to snug it securely onto the door for all drilling. My thumb is on the locking lever in *photograph 21*. When I move the lever all the way to the right until it stops against the inner handle, the Wild Jig will be tightly attached to the door. *(See photograph 22.)*



19. The guide lever rotated clockwise.



20. The jig will open to a door thickness of almost 2-1/4".



21. The locking lever.

22. With the locking lever locked the jig is secure.

The jig can be operated left or right-handed and the adapter is quickly shifted from one side to the other so you can drill inward from both sides of the jig.

The PRO-LOK Injig-Mort

The first three jigs that I've described for this article are all for cylindrical lock installations. For the average locksmith, those are the installations that you will be doing the most. PRO-LOK makes a very large variety of quality locksmith tools, which include lock installation jigs. The PRO-LOK jig that I will describe for this article is for mortise lock installations. *Photograph 23*, shows the PRO-LOK Injig-Mort installation kit and its carrying case. I have mentioned earlier about the time saved when using a jig for the installation of a cylindrical lock. It's generally faster and more accurate. Accuracy is pretty important when installing a cylindrical lockset, but it is critical when installing a mortise lockset. If you didn't know it already, door preparation for a mortise lockset is a lot more work and much more time consuming than for cylindrical locksets.

23. The PRO-LOK Injig-Mort installation kit.

24. A wood cutter.

This jig was designed by the well respected British locksmith Paul Souber. In Britain (and in Europe) mortise locks are much more widely installed than in the U.S., especially on residential doors. If you intend to install mortise locks, you probably should have a mortising jig. This jig from PRO-LOK is probably as simple and efficient a mortising jig that you will find to do the job.

To a certain extent, the jig acts like a super router. It makes plunge cuts and side-to-side motion cuts, but it has a vastly deeper range of depth to create the deep mortise required for the typical mortise lockset.

One of the secrets to the Injig's efficiency is the design of the cutters. It has been a few years since I spoke to Paul Souber about that subject, so I don't remember what the specifics were. The jig is intended for either wood or aluminum doors. The wood cutters have two cutting teeth and the aluminum cutters have three cutting teeth. Many cutters are designed strictly for side-to-side cutting while others are designed for plunge cutting. Paul told me that these cutters were specially designed for efficient cutting in both ways. The design of the cutter shaft is equally impressive. The cutters quickly attach to the cutter shaft and nearly as quickly can be detached from the shaft.

Photograph 24, shows a wood cutter being pushed into the cutter shaft. When pushed in far enough, it will snap into place and hold securely. The cutter is fully seated in *photograph 25*. If you look closely at the top end of the cutter shaft, you will see a visible line of separation where it is actually two separate parts connected. There is also a short painted line just below that line of separation running perpendicular to it. To release the cutter, you should push sideways on that end piece, just above the painted line. *(See photograph 26.)* You will notice that the end piece shifts slightly off center from the rest of the shaft. That unlocks the cutter and allows it to be pulled out of the cutter shaft. An end view of the cutter shaft shows the eccentric (off center) opening on the

Continued on page 52

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end piece compared to the balance of the shaft. It is the overlap of that end piece that holds the cutter in the shaft. *(See photograph 27.)*

Photograph 28, shows how the jig attaches to the door. The cutter shaft guide is automatically self-centering whether you are mortising a 4" thick door or a 1-3/8" thick door. There are stops in the door mounting clamps that can move up or down to account for the height of the cutout required for the mortise lock.

25. The cutter fully seated.

26. To release the cutter push sideways on that end piece.

27. The overlap holds the cutter in the shaft.

2.8. The jig attached to the door.

Prior to attaching the jig, you would first draw an approximate outline covering the area to be mortised. You will choose the diameter of the cutter to match the thickness of the lock case to create an adequately wide mortise (cavity) within the door. You must account for the cutter radius when you set the top and bottom stops. You may have to place the cutter shaft (with cutter mounted) into the guide bushing before clamping the jig to the door. If you are nimble enough, it is possible to position the cutter against the door surface and then slide the cutter shaft through the bushing until the two lock together. The cutters are sharp, so don't end up cutting your fingers just because you don't want to remove the jig in order to insert the shaft-mounted cutter.

A close-up view of the cutter (attached to the shaft that is guided through the bushing) shows it just making contact with the edge surface of the door. *(See photograph 29.)* You can determine the depth you need to cut by positioning the mortise lock body over the shaft and attaching a stop ring to control depth of cut. When the stop is in the right spot, tighten the setscrew and you can move your cutter side to side and in and out without worrying about cutting the mortise too deep into the door. After mortising for the main body of the mortise lockset, you may need to switch to a wider cutter to mortise for the side plate of the lock.

29. The cutter just making contact with the door.

Both the wood and aluminum cutters are designed to cut in and out and side-to-side, but you'll likely not plunge as deep per stroke with aluminum as opposed to wood. Obviously an aluminum door will be hollow and won't require cutting as deep into the edge of the door. After a fraction of an inch, you will have broken through the aluminum skin and into empty space. You may find yourself using something like WD-40 or cutting oil when cutting into aluminum to keep the surface cooler.

Although the jig is relatively simple, it wouldn't hurt to practice first on a 2x4 or some other piece of wood (or even a door that is disposable) to get the feel of it, before trying it out on a customer's door.

For more information on the jigs shown in this article (or other products made by those same companies), you can contact the following companies.

For the Bulls Eye jig contact:

A-1 Security Mfg. Corp.
3001 West Moore St.
Richmond, VA 23230
Phone: (877) 725-2121
or (804) 359-9003
Fax : (804) 359-9415
E-mail: fmcc@demanda1.com
Web: www.demanda1.com

For the HIT-44 Drillmaster contact:

Major Manufacturing Inc.
1825 Via Burton
Anaheim, CA 92806
Phone: (714) 772-5202
Fax: (714) 772-2302
E-mail: mail@majormfg.com
Web: www.majormfg.com

For the Wild Jig contact:

Locktools.com
60 North Winchester Blvd, Suite 4
Santa Clara, CA 95050
Phone: (408) 979-0337
Fax: (408) 723-3377
Web: www.locktools.com.

For the Injig-Mort contact:

PRO-LOK
655 N. Hariton St.
Orange, CA 92868
Phone: (714) 633-0681
Fax: (714) 633-0470
E-mail: mail@pro-lok.com
Web : www.pro-lok.com

TNL

Quick Entry UPDATE

by Steve Young
TECH TRAIN PRODUCTIONS

2002 KIA SEDONA

1. The Kia Sedona.

The Kia Sedona was introduced last summer as an entry-level mini-van for young, cost conscious families. As such, it has been a huge success. *(See photograph 1.)* Sales of this small mini-van have been brisk and they seem to be popping up like mushrooms after a summer rain in my area.

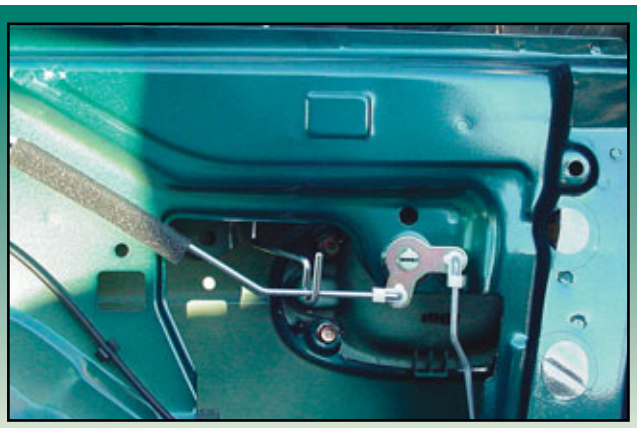
Like most of the new crop of mini-vans, this one is equipped with two sliding doors, one on each side of the vehicle. Each sliding door is equipped with a very large window. When the door is closed, the forward edge of this window rests squarely against the rear edge of the front doors. Because of the placement and size of the window glass in the sliding door, there is no safe place to rest a door-jacking tool such as the Jiffy-Jak Vehicle Entry System. This effectively eliminates the use of that type of tool on the Sedona. Fortunately, this is one new vehicle that is refreshingly easy to unlock with conventional "inside the door tools."

To unlock the Sedona, begin by wedging open a gap between the weather-stripping and the base of the window directly above the forward edge of the outside door handle on the front door. *(See photograph 2.)* An inspection light can be inserted into the door to locate the linkage visually, but I found that the linkage was very easy to locate by feel.

Next, insert the short end of the Tech-Train 1008 tool into the door and lower it until it is just below the level of the outside door handle. Rotate the tip of the tool until it is pointed away from you, and then slowly pull up on the tool until it

2. Wedge an opening above the outside door handle..

3. The tool should be on the control linkage rod.



4. Lever the linkage rod forward to open.

Quick Reference Guide

Vehicle: 2002 Kia Sedona

Code Series: Y2001 – Y3000

Direction of Turn (passenger side): Clockwise

Key Blanks: Ilco / Taylor: X253, Curtis / EZ: KK3, Jet: KK3-NP

Tool: TT-1008 (short end)

Bitting: Ignition 1 – 8, Doors 1 – 8, Trunk 1 - 8

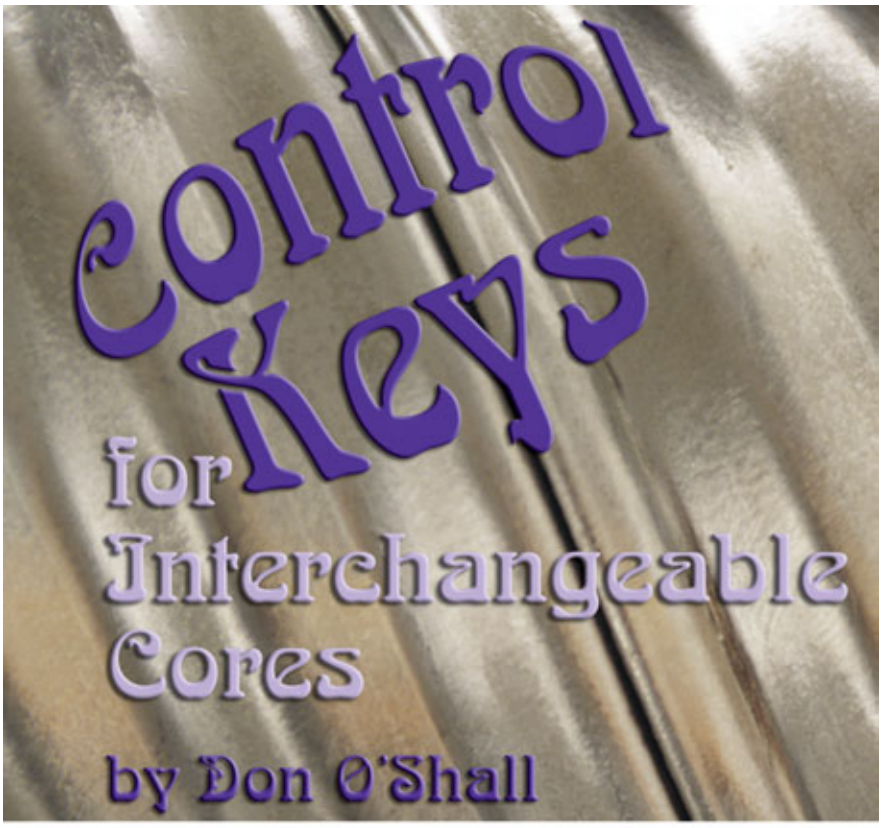
Lock System: Kia 8-Cut system

stops. At this point, the tip of the tool should be hooked around the horizontal portion of the inside lock control linkage rod. *(See photograph 3.)* Notice in the photograph that the horizontal portion of the linkage rod is relatively short and bends upward just forward of the point where the tool contacts the linkage. For this reason, it is important to properly position the tool as closely as possible to the forward edge of the outside door handle. (The inside surface of the outside door handle assembly can also be seen in *photograph 3*.)

Once the tool has hooked onto the linkage rod, twist the top of the tool in order to bind the linkage, and then lever the linkage rod forward by moving the handle of the tool toward the rear of the vehicle to unlock the door. *(See photograph 4.)* If you have trouble locating the linkage rod by feel, an inspection light can be used to locate the linkage rod visually.

The vertical portion of the linkage rod can also be attacked with the TT-1008 tool, but this method is not nearly as easy as attacking the horizontal portion of the linkage. To attack the vertical linkage, insert the tool as above, but position it as far to the rear as possible in the opening in the inside skin of the door. Slowly slide the tool upward until you feel it contact the bend in the vertical portion of the linkage. Once you are hooked around the linkage, twist the handle of the tool in order to bind the linkage, and then push down on the tool to move the linkage rod downward and unlock the door.

TNL



When teaching Interchangeable Core servicing, one of the most frequently asked questions is how to choose the Control (Core Removal) Key. After all, we have many guidelines for the successful design of a Top Master Key, and even some guidelines for preferred or undesirable Change Keys. Surely there must be a similar set of guidelines for the Control Key?

Interestingly, for the most part, the answer seems to be that, although large format cores (Corbin/Russwin, Sargent, etc.) have some specific (and often very limiting) guidelines, there are few absolute guidelines for the creation of the Control Key in small format interchangeable cores.

Products which from the standpoint of the control key itself are identical (such as the small format interchangeable cores produced by Arrow, Best, Eagle, Falcon, KSP, Lockwood, Lori PEAKS, Medeco Keymark, Schlage SFIC and others which use a control sleeve that includes all of the chambers) do not all use the same guidelines for its selection, and there are even a few cases where a manufacturer has made such rules, but it is not uncommon for either the factory assigned Control Keys or the factory assigned Control Keys from a manufacturer of a similar product to violate one or more of the rules.

In fact, most of the true guidelines for Control Key selection (large or small format) that ARE followed, are either similar to the guidelines for a good Top Master Key, or are simply guidelines as to Control Keys which are incompatible with the Top Master Key, which then result in a series of cores which cannot be successfully pinned or whose pinning will cause difficulties at some point in the future.

The guidelines for a good Top Master Key should be well known to the master keying locksmith, but briefly, as applied to the Control Key, they are:

1. No more than three cuts of the same depth next to each other; no more than three cuts of the same depth anywhere on a five pin key; and no more than four cuts of the same depth anywhere on a six pin key.

2. At least one cut of the deepest possible depth should be used, preferably in a position which falls into the control sleeve for the core.

3. The key should not have too many high cuts or too many low cuts, but it should also not be a declining step key (cuts get deeper toward the tip of the key) or a sawtooth key (too drastic of change from deepest to shallowest) This rule also eliminates situations where too many of the chambers would line up at the control shearline with no key in the core.

4. The Control Key should have a combination that can be correctly cut, not one that violates the MACS.

The Master keying locksmith may note that normally there is another guideline for selection of a good Top Master Key, which is that it should have at least one of the shallowest (most metal left on the key) cut depths as well. However, as noted above, there are additional rules concerning the Control Key, specific to various products and based on an incompatibility between the Top Master Key and the Control Key, which would result in either a series of cores which cannot be successfully pinned or whose pinning will cause difficulties at some point in the future. Many of these situations involve the use of the shallowest possible cut depth.

A good example of this is seen in the A2 series of depths. The A2 designation is from Best, but it has been officially, or unofficially, adopted by us to include most products which have a control sleeve of approximately .125 and increments of .0125, resulting in a control sleeve of ten increments in thickness. In these products, one of the most commonly printed guidelines is that the Control Key should not include a Zero or 1 cut depth because it could cause a number two wafer to be used as a Control Pin. Obviously such a pin at the upper shearline is undesirable, although this would actually only occur under two specific conditions:

1. If a Zero cut depth were used in a given position on the Control Key and a #8 occurred on the change key in that position.

2. If a 1 cut depth were used in a given position on the Control Key and a #9 occurred on the change key in that position.

It is not uncommon to see factory systems where one position violates this rule. Not every manufacturer agrees that it is problematic. If it was necessary to utilize a Control Key that violates this rule (because it was a previously designed system using

such a Control Key) the locksmith could correct this possible problem by eliminating all of the change keys that have an 8 cut depth in the same position that the Control Key has a Zero cut depth, and/or eliminating all of the change keys that have a 9 cut depth in the same position where the Control Key uses a 1 cut depth. This is similar in scope to the necessity to eliminate MACS violations in a master key system, and should not be an unwieldy burden for a locksmith. Obviously, however, it is easy to avoid this if you are designing the system yourself, and no Control Key is already in use.

A similar limitation occurs in Corbin/Russwin/Emhart System 70 (depth cut possibilities 1 to 6 with a .028 increment). In these cores, the use of a number 1 depth on the Control Key is discouraged in control sleeve positions because there is no build-up (control) pin available to accommodate a number six cut depth in a control sleeve position with a #1 on the control key in that position. On standard Corbin/Russwin cores, this would be positions 2, 3, 4 and 5 typically. However, in the interlocking pin (High Security) core product, it would be positions 2 and 3, counted from the face of the core. Additionally, the interlocking pin product does not have a number 1 bottom pin available, which further limits the possibilities.

In Sargent cores, another similar mechanical limitation becomes apparent. The control sleeve on Sargent cores is eight increments of thickness. If you use a #1 on the control key in a control sleeve position (positions 3 and 4 from the face of the core), a number 9 cut on the change key or master key in that position would bring the position to the control shearline, because 1 + 8 = 9. Similarly a #2 on the control key in a control sleeve position would permit a #0 (which, for Sargent is equivalent to a ten) cut to operate the control sleeve for that position. Sargent typically avoids the use of a #1 or #2 cut depth in a control sleeve position on the Control Key and avoids using a #9 or #0 on the Top Master Key in a control sleeve position.

The opposite holds true for Medeco High Security (not including the Keymark series) cores, where the control key MUST use a cut that is 3 shallower than the deepest cut used (properly a constant cut depth on both the Top Master Key and the Change Keys) in control sleeve positions. This occurs because the control sleeve is .090" in thickness, which corresponds to three increments. By using a Control Key that is three cuts higher in these positions, no build-up or control pin is needed or used. If the control key has a #1 on it, the deepest cut depth in that position between master keys and change keys would be a #4. If it used a #2 on the Control Key, the cut on the Top Master Key and Change Keys for that position would be a #5, and if it were a #3 on the Control Key, it would correspond to a #6 on the Top Master Key and Change Keys.

Regardless of the manufacturer of the core, it is necessary that the Control Key be a unique key in at least one position, and preferably at least two. Further, it is necessary that these positions where the Control Key is unique must fall within the positions included in the control sleeve. For small format interchangeable

cores, where the control sleeve includes ALL of the chambers, selection of the position(s) is obviously not a concern.

However, this limitation becomes VERY apparent when working with Corbin/Russwin/Emhart cores, especially if the need to use high security interlocking pin products also exists. The control sleeve on the standard products includes (from the face of the core) positions 2, 3, 4 and 5, but the High Security core only includes positions two and three in its control sleeve. This limitation means that if there is any chance whatever of using Interlocking pin products, the positions to be unique to the Control Key must, as a minimum, be positions two and three.

For the Sargent cores, the control sleeve only includes positions three and four (from the face of the core), so it is vital that in these two positions the Control Key must be unique.

Probably the easiest way to keep the two control sleeve positions on the Control Key for these products to be unique is to choose a progression sequence that uses these positions as the last progression sequences to be changed (assuming total position progression) and using them as though they were selective master keys by eliminating at least the last section of pages from the system, as well as eliminating the last group in each section. Obviously this reduces the possible combinations considerably and will not make sense in all systems.

In all of these examples, each rule generally made sense because it dealt with a mechanical situation that occurred under specific circumstances or situations. However, not every published rule falls into that category.

For Corbin/Russwin/Emhart and Sargent, generally the quoted rules suggest that you use the cut depths from the Top Master Key for all of the positions that do not fall within the control sleeve. This is based on the idea that because the Top Master Key already operates these positions it makes little sense to use a different cut depth, which would reduce the usable combinations. Frequently, however, there may be a need for a Control Key that removes cores from several different systems or that will be issued to persons who should not have access to the Top Master Key bittings, or for Control Keys that can only remove a group of locks within the system. In these cases this rule would not be followed, even on factory systems.

Another not quite so absolute rule, frequently seen, is that for the A2 series cores (and for their counterparts) you must use a Control Key, which has opposite parity to the Top Master key and the rest of the keys in the system. By this it refers to the pattern of "odds and evens" created by the two increment drop (or two step) format of master keying. If the TMK had, for example, a parity of EEOOEE, such as 245740, the Control Key, under this "rule" would have a pattern of OOEEOO, such as 352435.

But many manufacturers and locksmiths instead use a technique that consists of merely selecting and eliminating one change key from the progressed system and applying it as the Control Key instead.

While each way of selecting the Control Key has some disadvantages, even a quick glance at the use of opposite parity will convince you that its use will require special care.

By NOT reversing the parity, but simply selecting a Change Key to become the Control Key we have a minimum difference of .025 between our Control Key and any other keys in the system in at least one position. Remember that it technically takes only one unique position to prevent the Change Keys from operating as a Control Key in a healthy core, although two is generally preferred.

However, when using opposite parity, in the first position the Control Key ends up with only a .125 difference between Change Key bittings #2 and #4. In the second position, a similar small difference is seen between a #4 and a #6, in the third a similar small difference is seen between Change Key cut depths #1 and #3, etc. In short, the Control Key created under this often quoted "rule" results in 64 Change Keys which are only .0125 inches away from the Control Key in EVERY position, and which will almost definitely eventually pull the core, which does not seem like an acceptable result, causing many locksmiths and manufacturers to shun this way of selecting the Control Key.

But the locksmiths can reduce this problem with only a small degree of sacrifice within the system. Calculate the possibilities that are problematic because they affect EVERY position. There are only 64 of them and they can be easily progressed using a short version of the KBA.

For our example above, the Control Key cut depths were 352435. This gives us a KBA of unacceptable keys as follows:

Control Key:	3	5	2	4	3	5
	2	4	1	3	2	4
	4	6	3	5	4	6

Progressing that KBA of unacceptable keys gives us 64 combinations:

241324	243324	441324	443324
241326	243326	441326	443326
241344	243344	441344	443344
241346	243346	441346	443346
241524	243524	441524	443524
241526	243526	441526	443526
241544	243544	441544	443544
241546	243546	441546	443546
261324	263324	461324	463324
261326	263326	461326	463326
261344	263344	461344	463344
261346	263346	461346	463346
261524	263524	461524	463524
261526	263526	461526	463526
261544	263544	461544	463544
261546	263546	461546	463546

Each of the above combinations would need to be eliminated, similar to the way that MACS violations are eliminated. Of course, some of them will not appear on the charts of your system, depending on the method of progression, because they would have been undeclared Incidental Master Keys. (As most locksmiths are aware, only some of the Incidental Master Keys appear on the charts, not all of them.) This technique interestingly results in every change key having at least one position that is at least three increments away from the Control Key, a slightly superior result to the method of selecting a Change Key to become the Control Key.

Another technique to overcome the problems concerning directly opposite parity, (frequently used by Lori for its Peaks line of cores) is to alter the parity, but not a direct reversal, and to use a number 9 depth on the Control Key in at least one position in an altered parity position. By not using a direct reversal (where all even positions become odd and all odd positions become even) of the parity, the product gains some of the advantages of both methods. Instead of losing 64 combinations to the altered parity as occurs in a direct reversal as we saw earlier, this method only loses combinations in the position(s) where altered parity occurs, which reduces the combinations to be eliminated. Because of the use of the number 9 cut in an altered parity position, which is deeper than any of the other cuts appearing in the system itself, this technique also resists key wiggling or key pullout problems (Where a change key or master key either can be manipulated to pull the core or does so inadvertently during key removal from the core.) Of course, we still need to do the short version of the KBA related to the Control Key cut depths and the Change Keys that are too similar in all positions to determine unacceptable cuts to be eliminated, but there will be fewer of them than were seen when using opposite parity. Also, we cannot use a zero cut depth on the Control Key in an even parity position, because it would result in a series of cores that could not be pinned wherever the Change Key or Master Keys had a cut depth of nine.

If we wanted to increase the security against accidental core pulling when using any of the above techniques, we could also eliminate one additional cut depth that would have appeared in the system. When using the altered, but not directly opposite parity, this should be one of the non-reversed positions. When not altering the parity, but using a key that would otherwise have been a Change Key, the use of a position where the Control Key uses the shallowest or deepest cuts is preferred. Best Security Systems tends to prefer this technique for all of its core series (A2, A3 and A4) resulting in cores where even if a single chamber malfunctioned, security would be maintained because there are at least two unique positions to begin with and key wiggling is resisted by the use of the shallowest or deepest cut depth.

Obviously, not using one of the progression possibilities will reduce the usable Change Keys considerably. The lost combinations by eliminating one cut possibility for one position would be 1,024 on a six pin or 4,096 on a seven pin, a 25 percent loss. Remember that it technically only takes one position where the key does not line up at the control shearline to prevent a key from operating as a Control Key, but that it is preferable to have at least TWO such positions, which this would give us. Unless the system was so immense that it would be unacceptable to have such a loss of combinations, this should be seriously considered.

Selection of control key bittings will affect your master key system for the life of the system. It is therefore vital that you give some serious thought to the rules in the creation and implementation of the control key. TNL

Solving Electric Strike Problems

What do you do when an electrified strike doesn't work?

by Richard Allen Dickey

An electrified strike in the right location can be a very convenient item to have. Especially if you are trying to maintain a certain level of security and convenience at the same time. It is used by many small businesses as well as large companies. It will allow a receptionist the opportunity to remotely open a door to allow access, from the convenience of a desk. It is also most often connected to an automated entry system. It is a wonderful product… until it stops working!

In the August issue of *The National Locksmith*, I went into great detail about how a solenoid is made and what makes it work. Remember, a solenoid is the heart of any electrified strike. *(See photograph 1.)*

Today I want to talk about what to do when you troubleshoot an electrified strike. There is any number of ways that you can work on one of these systems, but some methods will prove to give results a lot faster than others.

For the purpose of this article, we will assume that the electrified strike is activated by a manual button located at a receptionist station. Why? I want to talk about strikes, power supplies, wiring and how to troubleshoot them. An automated entry system would simply take the place of the button that the receptionist has to press. Lets keep it simple for now.

The first thing I like to do is ask the customer what usually happens when they push the button that activates the strike. The first thing they will say is that the door opens. Then they wonder if they called the right person for the job. This is where I ask them to be more specific.

Does it always seem to fail when the same person tries to enter?

Does the door ever open easily on the first try or does it always take more that one try to get the door open?

Is the strike working part of the time now or is it not working at all?

Each of these questions can lead you in a different direction. For instance, if the same person always has problems but other people don't, you can bet that there is a pre-loading problem.

Pre-loading a strike, (pushing on the door before the electrified strike is activated) will cause the parts inside the strike to bind and fail to open. Different strikes are rated at different pre-load levels. Some strikes will take a lot of pre-loading and still open just fine. Others will bind and fail to open with just the slightest pre-load. The cure for this can be as simple as training the customer about pre-loading so they can pass to others, not to lean or push on the door until they hear a click or a buzz.

If it often takes more than one push of the button to get the strike to open, this could be an indication of a failing strike, failing power supply, bad switch or bad wiring connections.

If the system is working part of the time, it is known to be intermittent. An intermittent problem can be much

Continued on page 66

1. An electric strike solenoid.

2. All power supplies list their output voltage and power output.

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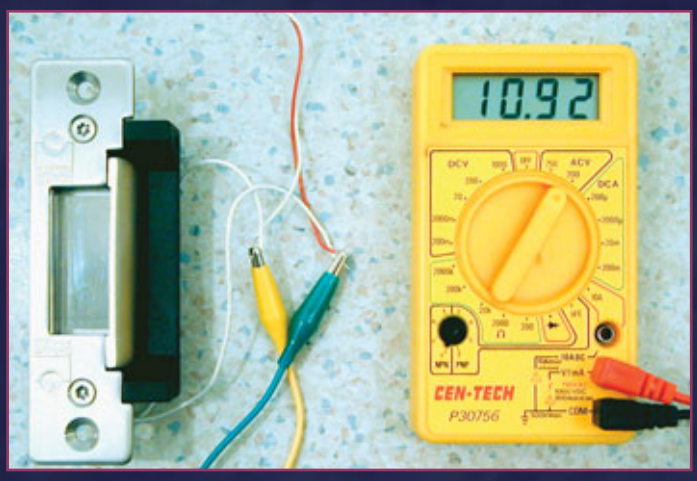
3. If the voltage is equal, or a little higher than the rated voltage things are fine.



4. After removing the strike check the voltage.

harder to find than a complete system failure. With a complete system failure you just find the bad part and replace it. It is the intermittent problems that scare people the most and this is what I want to talk about.

When I have an intermittent problem, I take a look at the whole system. What I mean by this, is that I will look at the electrified strike, the activation switch, the power supply and the wiring used.

If I am lucky, all of these parts will be in the same room. Often the power supply may be in an equipment closet (telephone room) along with lots of other stuff. Usually the activation switch will be in the same room as the electrified strike, but it doesn't have to be. Well, with all of these system parts, where do I start?

I like to look at the power supply first. The power supply can tell you a lot of things. All power supplies list their output voltage and power output. *(See photograph 2.)* The Voltage part is easy. For what we deal with, it will usually be either 12 or 24 Volts. The power supply in this photo is of the 24 volt AC variety. The power supply that I will use for the article is a 12 volt AC supply. Like I said, voltage is easy, understanding the power output can be tricky sometimes.

In the photograph, the power supply is rated at 1.5 Amps. Often they will be listed as Volt Amperes or VA. The most confusing part of power is the VA. Everyone has heard of Watts. An obvious example is the 100-Watt light bulb. Most have heard of Amperes or Amps for short. A one-room air conditioner will usually pull around 6 amps.

For the sake of simplicity, a VA is calculated the same way as a Watt. It is calculated by multiplying voltage and current. For those that want to get technical, a VA is considered apparent power when dealing with an AC circuit and it is considered true power when dealing with a DC circuit. The apparent power value is much higher than its actual value. The reason for the difference is something called reactance. This only occurs in an AC circuit and there is no need to dig any deeper than we are right now.

While looking at the power supply, this is a good opportunity to test the voltage. If the voltage is equal to, or a little higher than the rated voltage (10-20%), it is a good indication that things are fine with the power supply. *(See photograph 3.)* This power supply is rated for 12 volts and the reading is 13.7 volts. This is a 15% higher reading than rated and is perfectly normal.

If the reading is less than what it should be, disconnect the wires that go from the power supply to the electrified strike (the load) and check it again. If the Voltage goes to normal, the problem is almost guaranteed to be on down the line from the power supply. It could be

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wires or it could be the strike. Whatever the Voltage reading is, write it down so you don't forget. You will use it later.

Now I would move on to the strike. After removing the strike from the door frame, I check the voltage. *(See photograph 4.)* Don't forget to have someone push the button or whatever is required to activate the strike when checking for voltage. It goes without saying that there will be no voltage on a fail secure system if someone doesn't try to activate it.

If the Voltage is bad, disconnect the strike and test again. If the Voltage goes to normal, replace the strike with a good one. If it is still bad, the switch would be my next step.

Before I talk about the switch, what is a good reading and what is a bad reading? I always compare this reading with the one I took at the power supply. Good doesn't necessarily mean that the two have to match exactly. I usually expect some voltage loss through the wiring. How much loss? Well, if I loose 5% or less I don't worry. If I loose more than 5%, I will do a little math.

If my power supply was putting out one or two volts more than the 12 Volts it was rated for, a 10% loss will still provide very close to 12 Volts. For instance, if a 12 volts rated power supply that was actually supplying 13.77 volts but has a 10% loss, it would only drop the voltage to 12.4 Volts. With my 12 volt strike, 12.4 is just fine, so the 10% loss causes no problems.

However, if the original reading was only 12.2 Volts, a 10% loss would drop the voltage to around 11 volts. This will have some affect on the strike. Less voltage means less current flow, which means a weaker solenoid inside the strike.

In the example from photograph 4, the 10.92-volt reading represents just over a 20% voltage drop. Will 10.92 volts be enough to cause an intermittent problem? Probably not, but I would not be happy with this reading. How do you fix a voltage drop problem? Usually you would install larger wire or move the power supply closer to the strike. For now, let's just say that the voltage is not good and move on to the switch.

Testing the switch will be a little different than the other test so far. When I test a switch, I am looking for resistance. Disconnect both wires going to the switch and replace them with the test leads from the multimeter. Be sure the selector switch is in the lowest ohms setting available. Until you press the switch, you should have infinite resistance. With the switch pressed, a good switch will have almost no resistance. By almost none, I mean something in the neighborhood of "0.0" to "0.5" Ohms.

I have often seen switches that would have 10 to 50 Ohms of resistance. A switch like this may still work with some things but in a low voltage system like this one, a 50-ohm resistance in the switch is more resistance than the electrified strike has. This means that the switch is dropping (eating up) more voltage than the strike. When your 12 volts drops to 6 volts, the strike will either not work at all or only work once in a while after pressing the button several times.

If the switch tests good, the only thing left is the wire. If your voltage reading at the strike is "0" and the switch tests good, there is a broken or disconnected wire somewhere in the system. If the voltage is just low, the problem can be a bad connection, the wire is too small or the length of the wire is to long. Regardless of what the problem is, it will be necessary to do a resistance check of the wire.

Here are the steps to successfully test the wire:

- Disconnect the power supply.
- Remove the wires from the power supply.
- Short the ends of the wire by twisting them together.
- Go to the strike location and connect a multimeter to read resistance.
- Push the switch that would normally activate the circuit and read the meter.

The resistance that you read will depend on two things. How long the wire is and the size (gauge) of the wire. 18 gauge is a common size wire for this type of work. The resistance of 18-gauge wire is 6.4 Ohms per thousand feet. Smaller wire will have a much higher resistance.

Something that many people overlook when measuring the resistance of a wire run is the fact that they are measuring two wires, not just one. Remember that the wires are twisted together at the far end. So in a 500 foot run you will actually be measuring 1000 feet of wire. You will have a resistance of 6.4 Ohms. That's not a lot of resistance, or is it?

6.4 Ohms of wire resistance in a 12 volt circuit with a typical 12 volt strike that has about 50 Ohms of resistance, will cause a voltage drop of about 11.3% or about 1.3 volts. Our 12 volt circuit has just dropped to 10.7 volts. How did I come up with that? Easy, just take the resistance of the wire (6.4) and add it to the resistance of the strike (50) and you get "56.4". Now take the resistance of the wire and divide (6.4) it by the total resistance (56.4) and you get roughly ".113". Now slide the decimal place to the right two spaces and you come up with "11.3" or 11.3%. Now take the voltage from the power supply (12) and subtract 11.3% to get "10.68" or simply 10.7 volts.

If the resistance in the wire is to high, there won't be enough voltage to power the strike properly. Remember that a bad connection can also cause a high resistance to appear in the wire. It is best to check connections before replacing wire.

Lets look at something a little more realistic. Lets say that the power supply is located in a closet down the hall that is 75 feet away. Allowing for extra wire to run up the wall in the closet and down the wall at the strike, we will round this off to 100 feet. Next we have to double the distance because there are two wires. If 1000 feet has a resistance of 6.4 Ohms then 200 feet will have a resistance of 1.28 Ohms.

1.28 Ohms will cause a voltage drop of about 2.5% or 0.3 volts. That is a big difference from the 1.5 volts earlier. 11.7 volts is much more likely to operate the strike without problems over the long term that the 10.7 volts.

The Test:

Here is a test for you. I am going to give you all of the information that you need to design a system including the specifications for the components. Your job is to determine if it will work or not using only what is available in your truck. Any takers? Here we go.

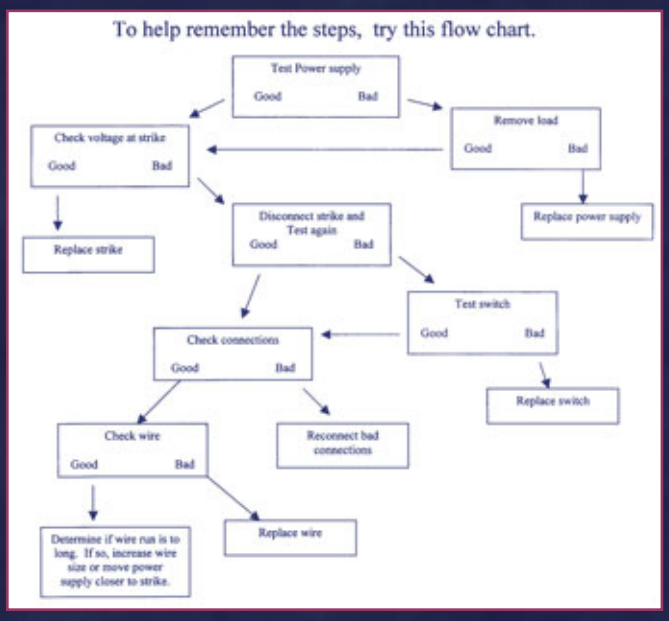
A customer has requested that an electrified strike be installed at the main entrance and that the receptionist be able to press a button

to let employees enter. The customer does not want any wire showing or any of those silly little power things hanging from the wall in any of the office areas. If there has to be one of those power things installed, there is an equipment room 365 feet down the hall from the main entrance. The receptionist is located 150 feet down another hallway. There is a video camera in place that the receptionist uses to see who is at the door. You can not use any part of the video system to help you install your system.

You just happen to have in your truck, one 12 volt AC electrified strike. This strike has a resistance of 46 Ohms and will not work with less than 11.0 volts. You have one 12 volt AC power supply that tested in the shop as good and had an actual voltage of 13.2 volts when tested without a load. You have 2000 feet of 22 gauge wire that has a resistance of 16.2 Ohms per thousand feet.

Take your time before jumping to the answer at the end of the article.

We have just gone over how to test a power supply, how to determine if the strike is bad, how to test the switch and how to test wire. At the end of this article is a flow chart to make it easy to go through the steps. If you read my multimeter articles that started in February of this year, all of these tests should have come very easy for you. If you missed them, go back and check them out. If you have a limited knowledge of multimeters, the four part series will definitely help you out. Have a nice day!



Test Answer:

The answer is NO. The voltage supplied to the strike would be 9.6 volts and the requirements for this test was 11 volts. If you came up with 11.2 volts for an answer, do you know what you forgot? Here is a hint. There was a total of 1030 feet of wire needed for the installation. If you came up with 515 feet, you forgot to double it.

The wire resistance was 16.7 Ohms for a total of 62.7 Ohms. 16.7 divided by 62.7 comes really close to 27%. When you subtract 27% from 13.2 volts, you get 9.6 volts to operate the strike. If you didn't get this one right, better luck next time!

To help remember the steps, try this flow chart.

TNL

Beginner's Corner

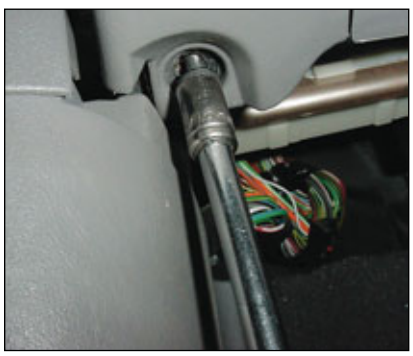
By Jimmy Benvenutti

Ford Focus Ignition Removal

This is the easiest way I have found to replace the ignition on a 2000–2001 Ford Focus when all the "normal" methods, such as lubing, raking the tumblers, tapping, etc. fail. This vehicle seems to have an abnormally high ignition lock failure rate.

1. The vehicle I serviced was a 2000 Ford Focus at a local dealership.

2. The ignition is on the column.



3. There are seven screws that have to be removed to access the ignition lock. Four are on the lower dash panel. Three are obvious and one is hidden on the lower left. They are 8mm (5/16").

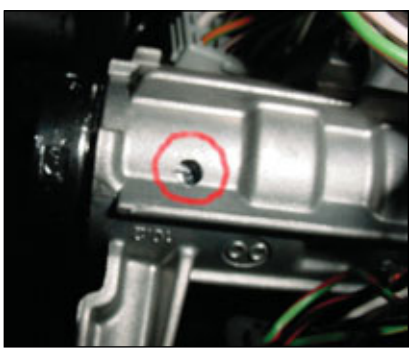
4. If it wasn't for the one bottom clamshell screw in the red circle behind the tilt pull, the lower panel wouldn't need to be removed.

5. Once the lower panel is out of the way, access to the bottom clamshell screw is a snap. The other two are obvious. Torx T-20 by the way.

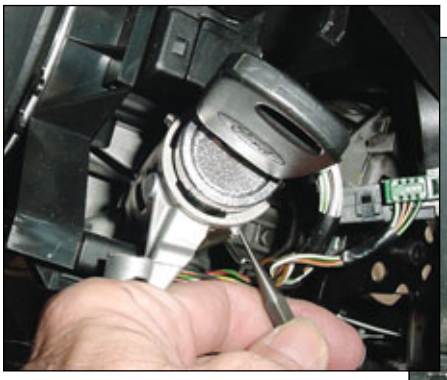
6. The only thing holding the top half of the clamshell is two plastic tabs at the front. Push them in with a small screwdriver and lift to release them.

7. Now you have access to the lock assembly.

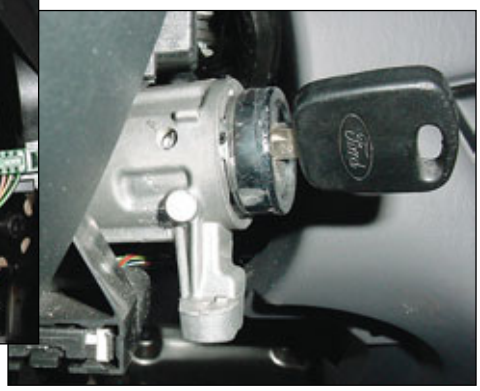
8. There is a single T-20 Torx (sometimes Phillips) screw holding the PATS receiver in place. It's concealed behind a wiring harness.



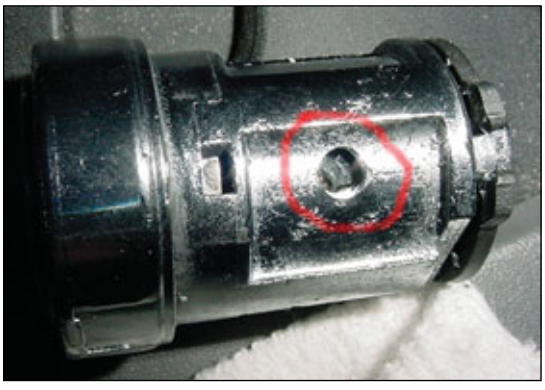
9. Once the receiver is moved out of the way, drill a small hole in the housing as shown (drill point courtesy of Jim Hetchler). Drill carefully through the lock housing, then a little more to go through the cylinder housing. If you get heavy handed with the drill, you will drill through the sidebar!



10. Once the hole is drilled, insert the key (if possible) and use a small pin punch to tap the sidebar in.



11. Once the sidebar is in, you will be able to turn the switch to the run position, depress the retainer and remove the switch.



12. This is what the drilled cylinder looks like. Unfortunately this job was for a dealership and I didn't get to disassemble the cylinder, just replace it. TNL

The Lighter Side

What Is That Thing You Do?

by Sara Probasco

Did you ever wonder exactly what the public thinks locksmiths do?

"Do y'all make keys?" some of them ask us. Usually, the question comes from somebody standing in our store surrounded by walls of key blanks and key-cutting machines!

Our standard answers are either, "No, that's just wall paper you see, but isn't it realistic?" or "No, this is my private key collection." Sometimes Don will stagger back and say, "Golly-gee! Is that what those things are? I guess I've been standing in a gold mine and didn't know it."

Joe and Jackie, a young couple who operate a lock service in Star Lake, Iowa, said that they recently took a vehicle lockout call when the customer asked, "Well, how does he get into a locked car? Does he use a hammer and break the window?"

Jackie told her, "He's a locksmith. He uses special tools to open the door. If you want the window broken, you'll have to do it yourself."

Of course there are also the people who are convinced we have a "master key" that will open any lock - anywhere. Some adamantly insist that they know this is true, because a friend or relative knows somebody who has one. I guess if we don't know about it, we must not be much of a locksmith.

To those, we come back with a look of innocent adoration and say, "You know, I've heard about those. Do you think there's any way you could get me some information about one? I'd really like to have a key like that."

There are others who think we keep copies of, or at least information about, all the keys we've ever duplicated. Every now and then we get a call from somebody who has lost a key, wanting to know if we still have a copy of the key from months ago? sometimes even years ago! They can't understand why we don't at least have a record of it.

Television programs like Magnum P.I. and Murder She Wrote haven't helped matters in that direction. I remember one episode where Jessica Fletcher needed to get into a gym locker at a community center. She called a local hardware store to see if they could supply her with a key.

"I understand you duplicate keys for city employees," she said, "so I suppose you can make them for the community center as well."

The hardware man acknowledged that they did.

"Then you must have a master key for the locker I need to get into."

"Sure."

Magnum gave us fits for years, prompting customer comments like, "Well, it doesn't take Magnum that long to pick open a lock," or "Magnum uses a skinny little wire to get in. Don't you have one of those?" To which we reply, "Of course we do, but if we use it, we're required to charge Magnum prices." We didn't hear much more from them about that.

So many who call us have no idea that we can replace lost keys for them. I don't know what they think they're supposed to do when they've lost their only keys.

"You mean you can make new ones without a key, number, or anything?" a regular lock and key customer named Ralph asked, recently. It was the first time he'd ever lost a key to a vehicle.

"Sure, no problem," Don told him. "I'll be right over."

That didn't end the conversation, however. Ralph found the concept inconceivable and pressed for more information. He gave all sorts of weird and complicated suggestions for the solution, while Don was just trying to get off the phone so he could get out there to do the work.

By the time Don arrived at Ralph's location, Ralph's daughter arrived unexpectedly and had a spare key.

"I'm sorry we called you out on a weekend." Ralph apologized, reaching for his wallet.

"What do I owe you?"

"No charge." Don was in an unusually generous mood that day.

"No, no. That's not fair. You came out when I called and I want to pay you for your time."

"Don't worry about it. Just come into the store and buy something some time and we'll call it even."

Ralph handed him a twenty-dollar bill. "Here, at least take this."

"I didn't do anything to earn it," Don insisted.

"What do you mean you didn't do anything? Man, you probably saved my life! When Molly found out I'd lost the keys to her new car, there was murder in her eyes. Just knowing you were on your way and could get the car open with out tearing it up saved my marriage, at the least. It may have saved my hide!" Ralph stuffed the bill into Don's shirt pocket.

"I'll be in on Monday to get duplicates made of every key I own," he added. "I've been meaning to do it for years and never got around to it. I tell you, I'll never be caught like this again. If I can get that old safe in the basement open, I'm going to start keeping a back-up of all my keys in there for emergencies. Man, I learned my lesson today."

When Don told me about this, I couldn't help laughing. "How long do you suppose it's been since he had his safe serviced?" I asked.

"I don't know, but as old as that safe is, and knowing Ralph's talent for procrastination, this may wind up being the most expensive set of keys he's ever had duplicated."

Sure enough, a few weeks later, Ralph called again and asked, rather sheepishly, "What is that thing you do to get safes open when the combination won't work?" TNL

ESL by AMSEC

by Dale W. Libby, CMS

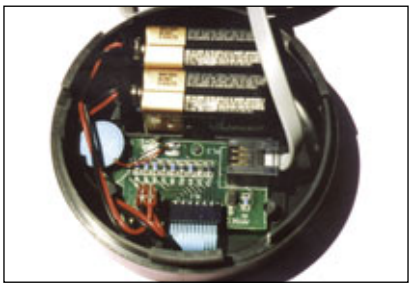
The ESL Electronic Safe Lock by AMSEC is a dependable deadbolt unit that has several interesting features, and is quite easy to retrofit on AMSEC and other safes and chests as well. Here are some of the features that I use and find appealing.

Photograph 1, shows the standard old style keypad. There is also a newer version of this keypad. When entering the combination, it is important to note that the "C" or clear button must be pressed before entering a combination and the Number (#) key must be pressed to enter the numbers after the normal 6 digits are used. There is also a roll over feature that will let you enter any numbers into the combination before opening, but more on that later.

1. The ESL standard old style keypad.

To remove the keypad to change the batteries or for repair, just turn the pad a small turn counter-clockwise and pull. The keypad will easily pull out to replace the two batteries. It reinstalls just as easily. Align, push in and turn to the right until it stops.

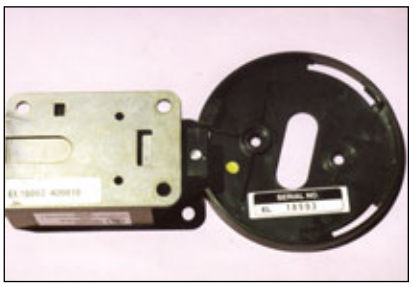
The ESL lock body cannot be disassembled. It is press fitted together, which means if there is a problem, replace it with a new one. The wire from the lock attaches to the back of the keypad by means of a modular fitting similar to a modern phone jack. *Photograph 2,* shows the plug connection as well as the two alkaline batteries. The batteries and connecting wires can be removed by pulling out a red slide connector plug if service on the wires or connector must be done.



2. Keypad with batteries. Turn CCW and pull to remove keypad from safe door.

After removing the keypad, there is a sticker on the dial ring with the serial number of the lock. This lock's number is EL 18993. In *photograph 3,* you can see the serial number on the dial ring on the right. This is the same number that is on the paper tag on the bottom of the lock body. Next to this number is another number, in this case 409816. This is the reset number of this particular lock.

If you are ever locked out of this lock with a lost combination, and you have this number, just enter



3. Tag on dial ring has lock serial number that also appears on the bottom of the lock case on a paper tag.

(C409816#) and the lock will automatically reset to the factory combination of (C123456#). Just dial the reset number and the lock will open. If you ever sell or work on this lock, remove the lock from the door and find this number and record it in your files for future reference. Do not give this number to the customer.

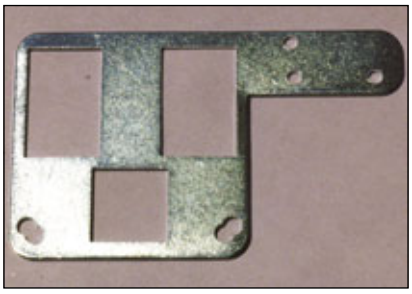
If you are registered with AMSEC as a qualified service technician or service provider, with the EL serial number they can give you the master override combination by phone.

The lock pictured here is a lock that I removed from a malfunctioning container. Whenever servicing any electronic lock, the first thing I do is to replace the 9-volt or AA batteries, no matter what the customer tells me. When changing the batteries, I always check the 9-volt leads from the battery connectors. At times, these leads have become fatigued from rough handling due to battery changing abuse, and all you have to do to repair the lock is to replace or

repair these leads. Bring a soldering iron. In this electronic age, a good soldering iron, solder (rosin core), and a solder remover are important for easy on site repairs.

When the combination was entered into this lock, you would hear the bolt move, but the container would not open. The clerk stated that if you did this enough times (about 20), the lock would open. This was not acceptable. They only called us because the safe was locked for three days, and no amount of repeated combination entering opened the lock.

The ESL is a deadbolt type lock. If you were to drill into the case or body of the safe and try to push the bolt up, it would not move. When it is out, it is locked out. This is a good feature. On some other electronic locks, the bolt is square, but is can be pushed into the lock case even if the combination is not entered. Not so here. I first suspected a set relocker, but a small hole to the right of the lock (from the outside) showed that the spring loaded relock plunger was held in the non-fired position. *Photograph 4,* shows the multi-functional relock plate. It can be mounted either horizontal left or right and offers several possible configurations for different type relock mechanisms.



4. Relocker plate can be installed either left or right-handed.

"If you are not a member of the NSO, think about joining if you are making safe servicing a part of your business."

—Dale W. Libby, CMS

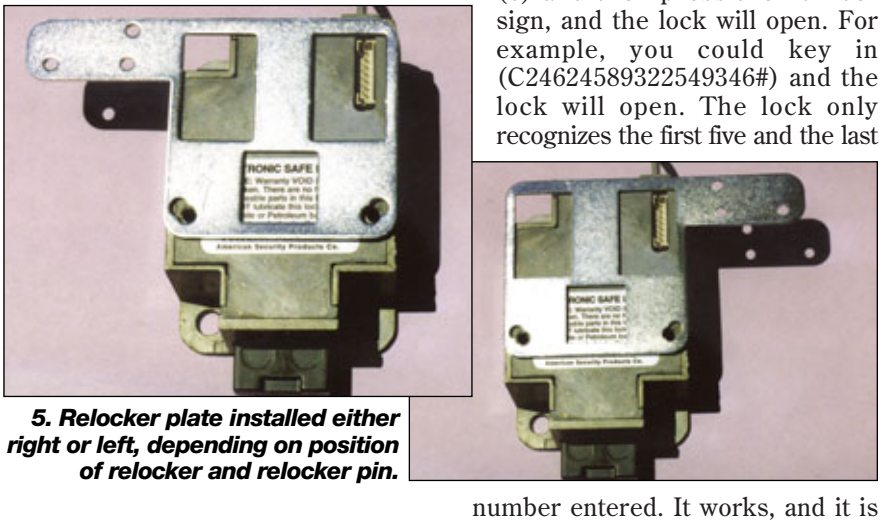
I opened this lock with Steve Stegle, the American Locksmith (he was born on the 4th of July).

I determined the handing of this lock by looking at the cable and cable channel in the lock case. The cable went up, so the lock (and bolt) were mounted Vertical Down. I marked a hole 2-½ inches down from the center of the cable hole and had Steve drill until he hit the bolt. When we entered the combination, we saw the combination bolt jump up and down about ⅛" for about a ½ second. This was not enough to let the safe container slide bolt move and open.

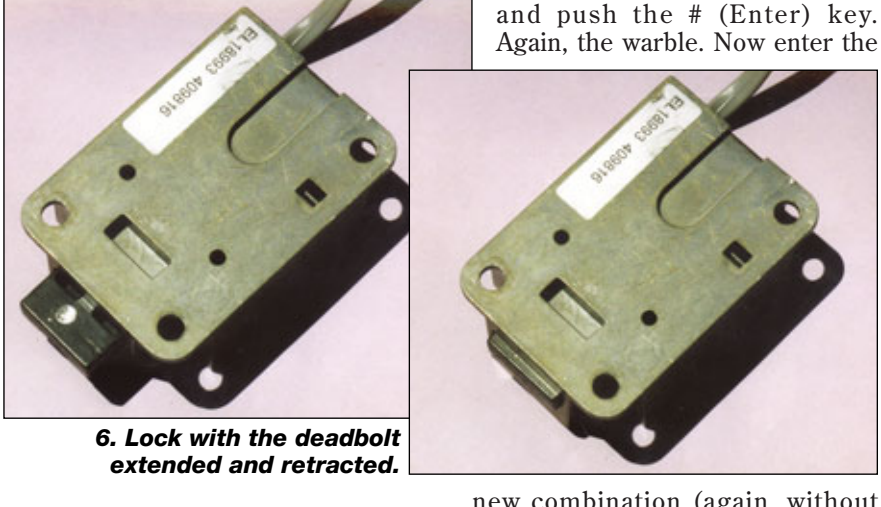
We could not pry the bolt up, but we had a good idea what might work. We dialed the combination and when the bolt stuttered, we put pressure on the handle and this held the bolt up a little. Then we stuck a bent ice pick in and were able to push the bolt all the way up into the lock and turn the handle to get the lock and the safe door open. Time for a new lock. I have the old lock and it works fine, not connected to a safe. I will keep it as a display model and will experiment with spiking.

There is a great article on ESL locks in the NSO Summer 2002 magazine. If you are not a member of the NSO, think about joining if you are making safe servicing a part of your business.

A new relock plate is packed with all new ESL locks. This is how it can be mounted. *(See photograph 5.)* The plate is cut so it can be mounted either right or left. There is also a slot in the plate that allows a multi-pin connector to be installed into the back of the lock. This connector is attached to an electronic board that is attached to 120 volts AC. This is back up electricity in case the battery power fails. It is not required to have this back up power for the lock to work correctly.



5. Relocker plate installed either right or left, depending on position of relocker and relocker pin.



6. Lock with the deadbolt extended and retracted.

Photograph 6, shows the lock with the bolt in the extended locked position and in the open retracted mode. The silver dimple was made when drilling for the bolt to retract it. Note that there are only three screw holes to attach this lock to the door. A secret spiking point is located under the paper tag where the fourth mounting hole is located.

Now, for the fun part of playing with this lock. Let us assume the lock combination is 246246. To get the lock open, one would dial (C246246#). This lock has a roll over function for the sixth number. If you wanted to confuse anyone watching you enter the combination, you could enter C24624, and then enter any number of entry's you wanted ending with the last number of the combination (6) and then press the number sign, and the lock will open. For example, you could key in (C24624589322549346#) and the lock will open. The lock only recognizes the first five and the last number entered. It works, and it is fun. It will confuse the customer too.

To change the combination on this lock is easy and fast. Change the combination with the door open. Always with the door open!

First, enter C#, and you will hear a warble tone. Now, enter the old combination (without the "C") and push the # (Enter) key. Again, the warble. Now enter the new combination (again, without the "C" key) twice. You will hear the warble after each entry. The combination has changed. Try it and it will work. If you do something wrong you will hear 3 beeps and this is bad. After four wrong entries, there is a shut down time where the lock will not accept any entries. Be careful. If you do not change the combination correctly, it will revert to the existing combination.

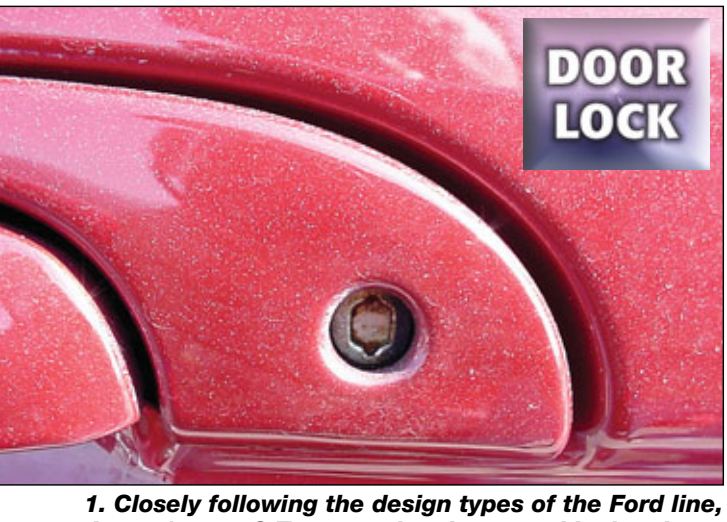
So, retrofit, change the combination, join the National Safeman's Organization, and Prosper. TNL

part 2

2002 JAGUAR S Type

by
Tom Seroogy & Randy Mize

We conclude this series on the Jaguar S vehicle with the door and trunk lock service procedures.



1. Closely following the design types of the Ford line, Jaguar's new S Type may just be a good look at how some of the North American influences may be shaping the new line of Jaguars to come.

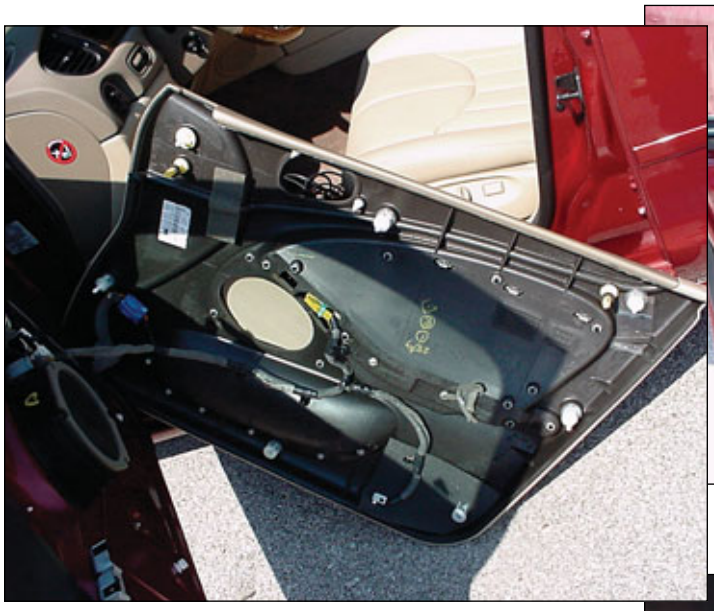
2. To remove the lock, first open the door.

3. Going to the armrest, remove the small rubber liner at the bottom of the armrest handle, exposing two screws that are to be removed.

Continued on page 86

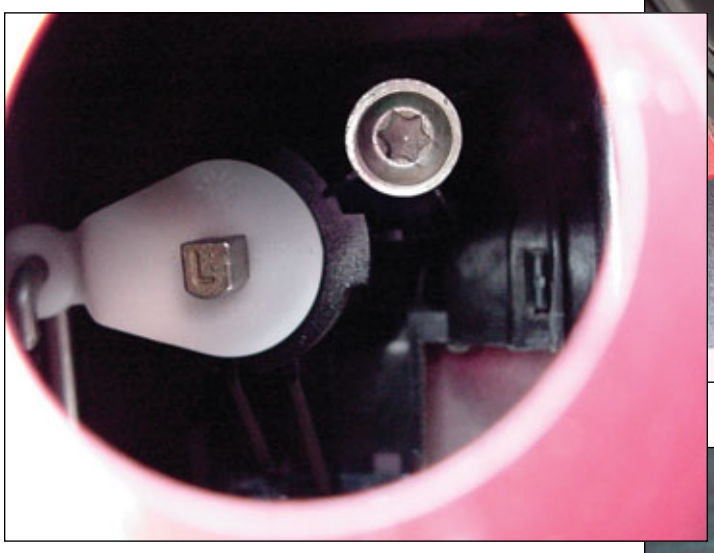
Continued from page 84

4. Next, remove the inside door handle trim.



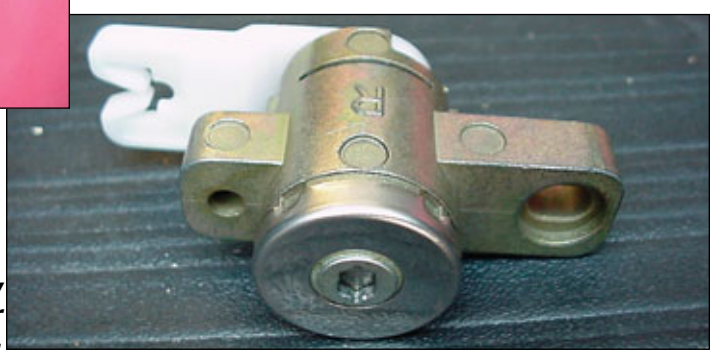
5. This allows the door panel to be removed.

6. Removing the black plastic barrier is necessary for gaining access to the outside lock handle.

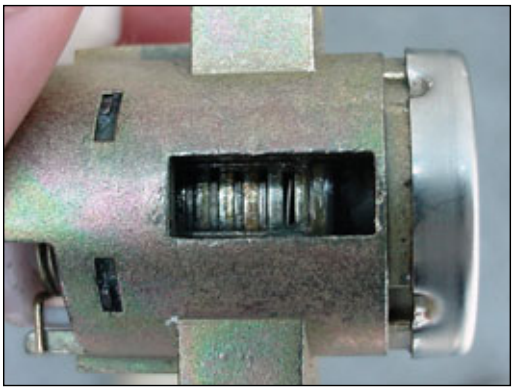


7. With the barrier removed, the lock's mounting bolt can be accessed.

8. Remove the bolt to remove the lock.



9. The lock can now be removed for service.



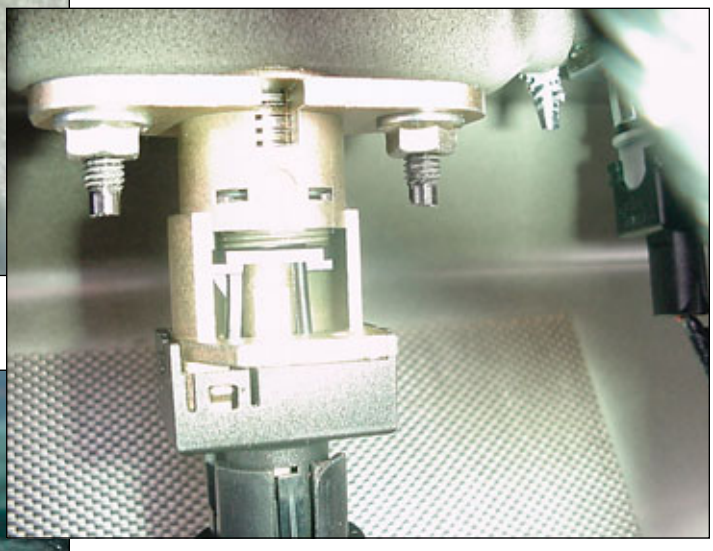
10. The lock can be read for generating a key.

11. Deck lock on the Jaguar is not visible with the trunk or deck lid is closed.

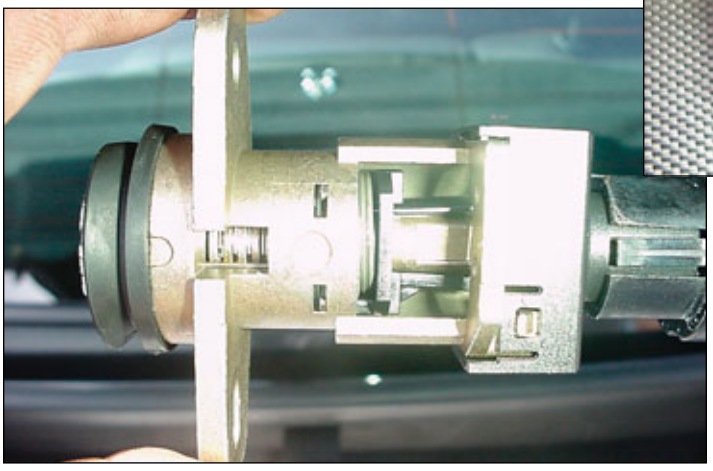
12. The lock is actually hid underneath the edge of the trunk's trim.

13. To remove the trunk lock, first open the trunk. A fabric/leather strap is seen on the front edge of the trunk lid.

14. Remove the small bolt that holds the strap to the trunk lid, and then remove the trunk lid liner.



15. At this point, the trunk lock is easy to access and remove.



16. Remove the two nuts holding the lock in place, and remove the lock.

PROGRAMMING

17. Despite its European lineage, the nicest service feature of the Jaguar S Type is that the transponder key, although available through dealers only, can be programmed using Ford's NGS system. Follow standard programming procedures using the HEC protocol or module.

It should be noted that when first programming the S Type with the NGS, the Ignition Key Code Program function might not work. If this is the case, it will be necessary to use the Ignition Key Code Erase function. Remember that this function requires two keys to complete!

Specifications

Number of Cuts: 8
M.A.C.S.: 2
Key Gauged: Tip
Center of First Cut: .0868
Cut to Cut Spacings: .080
Cut Depth Increments: .020
Notes: *Dealer only transponder key.*

Spacings:	Depths:
1 = .0868	1 = .245
2 = .788	2 = .225
3 = .708	3 = .205
4 = .628	TNL
5 = .548	
6= .468	
7 = .388	
8 = .308	

TECHNITIPS

YEAR-END PRIZES

Grand Prize
Silca Bravo Duplicator

1st Prize
HPC's 1200PCH Punch Machine

2nd Prize
Mas Hamilton's PowerLever 2000

3rd Prize
Curtis 2200 Duplicator

4th Prize
SDC Magnetic Lock, Keypad and Exit Switch

5th Prize
Securitron 12-Volt Unlatch Plug in Trans & Touchpad Retail Value $650

6th Prize
LaGard "SmartGard"

7th Prize
Detex Advantex

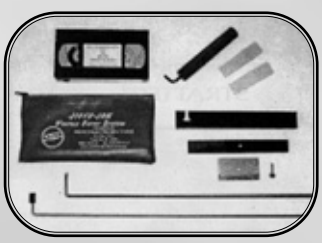
8th Prize
Arrow 400 Series Alarmed Exit Device & S-75 Mounting Plate Kit for Narrow Stile Aluminum Doors

9th Prize
$500 in BWD Products

10th Prize
$500 in ASP Auto Locks

STRATTEC

11th Prize
$500 in Strattec Auto Products



12th Prize
Tech-Train "Jiffy Jack"

13th Prize
Sargent & Greenleaf 6120 Electronic Safe Lock

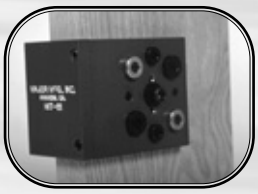
14th Prize
High Tech Tools 2000 Pro Set

15th Prize
Slide Lock's Master "Z" Tool Set

These Prizes Awarded Each Month!

- *Wedgeco™ Key Extractor Kit*
- *Strattec Racing Jacket*
- *HPC Air Wedge™*
- *Sargent And Greenleaf 4400 Series Safe Deposit Box Lock*
- *A-1 Security Products*
- *ILCO Key Blanks (100 Blanks)*
- *Keedex "SPIN OUT" Screwdriver*
- *Tech Train Training Video*
- *Sieveking Products Gm E-Z Wheel Puller*
- *Major Manufacturing Products*
- *Slide Lock's "Z" Tool Opening Set*
- *The Sieveking Auto Key Guide*
- *Jet Key Blanks (100 Blanks)*
- *High Tech Tools*
- *LaGard Combo Guard*

16th Prize
ESP Products Sampler



17th Prize
Major Manufacturing's HIT-111 Drill Guide

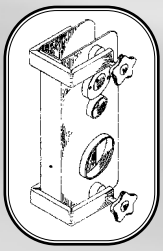
18th Prize
Abus Padlock's Marine Padlock Display ($120 Retail)

19th Prize
MBA USA, Inc. Falle Pick Set

20th Prize
Baxter JV-1 & JV-5 Code Books

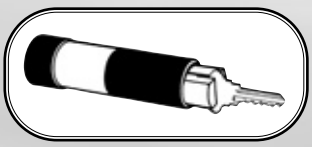
21st Prize
Sieveking Products Squeeze Play

22nd Prize
Rodann's RV500 Wireless Door Annunciator System



23rd Prize
A-1 Security Manufacturing Installation Jig

24th Prize
Keedex Sampler



25th Prize
Framon Impressioning Handle

26th Prize
Gator Tool Multi-Purpose Facecap Tool

Tips Start on Next Page

Send in your tips, and win!

How To Enter
Send a tip on how to do any aspect of locksmithing. Certainly, you have a favorite way of doing something that you would like to share with other locksmiths. Write your tip down and send it to:

Jake Jakubuwski, Technitips Editor,
The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107-1861

Or send your tips via
E-mail to: Natllock@aol.com

Rules & Regulations
Each tip submitted must include your full name, street address (no P.O. Box numbers), city, state, zip code, phone number, fax number and e-mail address ***When sending tips via e-mail make sure to include complete address and phone.***

Every Tip Published Wins
If your tip is published you will win one of the monthly prizes listed. At the end of the year, we choose winners from all the monthly tips published, that will be awarded one of the fabulous year end prizes. All you have to do to win is enter.

Prizes are arranged according to suggested retail price value.

JET KEY BLANKS WINNER:
1986 Yamaha V-Max Key Substitute

After being called to make a key for a 1986 Yamaha V-Max, I found that I did not have the proper blank (X-118 or Y449). Checking to see if I could substitute another blank, I found that a Nissan X-115/DA-25 would fit the keyway, but the blank was of course too long.

I shortened the blade of the key to ¾" from the stop to the tip, and filed a double ramp at the tip to allow the key to pass the wafers in the lock. Then it was just a matter of cutting the key to code and going on to the next job.

Bert Watson
Colorado

WEDGECO KEY EXTRATOR WINNER:
Jumping a Lexus Trunk Tip

I was asked to open a 1995 Lexus GS300 with the keys locked in the trunk. The doors were unlocked, but the valet lock for the trunk release was locked.

My *AutoSmart* indicated you could drop the lower dash panel and there is a clip around the lock that you can remove allowing it to unlock. I didn't see the clip, but I could see a two-wire electrical connector on the back of the trunk release switch. The lower one ran to the back of the lock. I disconnected it so I could reach and disconnect the upper one. Using a "U" shaped piece of wire, I jumped the upper wire connector and popped the trunk.

William Kimbley
California

Editor's Note: William, thanks for sharing this with us. The only word of caution I would add is to be careful about "jumping" or bypassing any electronic systems or wiring in many of the newer automobiles. A wire improperly attached or touched to a contact on many new cars can have disastrous effects on other systems within that vehicle. That could open you up to liabilities that you might not want to deal with.

STRATTEC WINNER:
Bypassing The Hardened Plate in A GM Ignition

When all else fails and you need to drill through the hardened disk on a vandalized GM ignition, this really works fast.

Get your Dremel tool and cut through the top and bottom portion of the keyway. Now you have two halves of a hardened disk. With about a ⅛" gap between the two pieces, you can push each piece to the center and pry them out easily.

The sidebar is hardened so drill in front of it, push the sidebar in, pick the wafers and turn the ignition for removal.

Mehdi Zahedi
Ohio

HPC WINNER:
Merkur Key Origination Trick

Here's a tip for making a key for the Merkur XR4Ti. Most manuals say the code is on both doors and sometimes the trunk, which means you have to take down the door panel or bypass the trunk lock. If you don't want to disassemble a door panel, go to the glove box. It's a squeeze type lock just like on some of the GM's. Remove the clip that holds the lock in and remove it.

With the lock out, spread the two tabs on the back to remove the cylinder from the front. The code is on the cylinder. The code series is TX 001-1859, and this car was in production from 1985 to 1989.

Jonathan Muhammad
Georgia

A Few Words From Jake...

by Jake Jakubuwski

It's fall already and it seems that I was just gearing up for summer! It's been a busy time for me, although I haven't been around much. I've been doing Tips, Tricks and Stuff seminars.

Folks have invited me up to Wisconsin, Arkansas, New Jersey, South Carolina, New Jersey and Texas. In November I'm going to conduct a Tips, Tricks and Stuff seminar for the North Carolina Locksmiths Association and in December, unless the weather causes a cancellation or there is a change of plans, I'll be in Iowa.

From my standpoint, these seminars have been a really great learning experience for me!

For the past eight or nine years, I've been sitting in front of a typewriter, word processor or computer, several hours a month compiling and editing this column. This has been a great experience and taught me a lot about the people that comprise our craft.

Over the last eighteen months or so, I've been sort of "in the trenches" sharing information with locksmiths that other locksmiths have provided me. At the same time, the locksmiths that have attended my seminars have taught me even more tricks, tips and stuff.

For those who don't know much about me, I'm a locksmith just like you are. I get up every morning, leave the house, rekey locks, install deadbolts, fix broken locks, closers, hinges, and do a hundred and one other things that locksmiths do everyday.

Over the years reading the Technitip column and then editing it, I've learned an awful lot from other locksmiths that make my days easier and many of my jobs go faster. For that I'm really grateful.

But, I've got to tell you, it's even better when I'm in a room of locksmiths that are eager to learn from the tips and tricks offered and share their own experiences with the rest of the class.

So, if you hear about one of my Tips, Tricks and Stuff seminars taking place near you, come on up, down, across or over, share some fun, information, tricks, and let me meet you in person.

Mostly, I want to meet you because I've found out that you guys and gals are really resourceful and a creative bunch of folks. I've learned a lot from you.

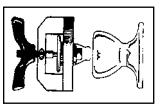
See you next month!

SARGENT & GREENLEAF WINNER:
Key Origination for '98 Kia Sephia

Recently I discovered that the ignition switch for a '98 Kia Sephia has numbers visible on all seven wafers. Using a light to see the switch and a hook pick to manipulate the wafers, I was able to read all the digits and cut a key by code on my HPC CodeMax.

The numbers were backwards from the specifications in the CodeMax, i.e., 4=1; 3=2; 2=3; and 1=4. When I cut the key using these inversions it worked. I would expect that all the vehicles in this code series (Y7001-8200) would work the same way, but can only speak for the '98 model.

John E Hines
Texas



A-1 SECURITY PRODUCTS WINNER:
Revealing a Hidden Code

A customer called with a lost key complaint. When I got there I checked my *Fast Facts* book to locate the code for the vehicle. Fast Facts indicated that the code for the customer's car was on the passenger door lock.

Initially after pulling the lock, the only thing I found was a cylinder corroded with grim and weathering. I figured if there were a code beneath all the corrosion, I would probably damage it. I tried to scratch the corrosion off the cylinder.

I found that a Scotch Brite® scouring pad (#07447) will clean off all the dirt, grime and weathering and reveal the code without damaging the cylinder.

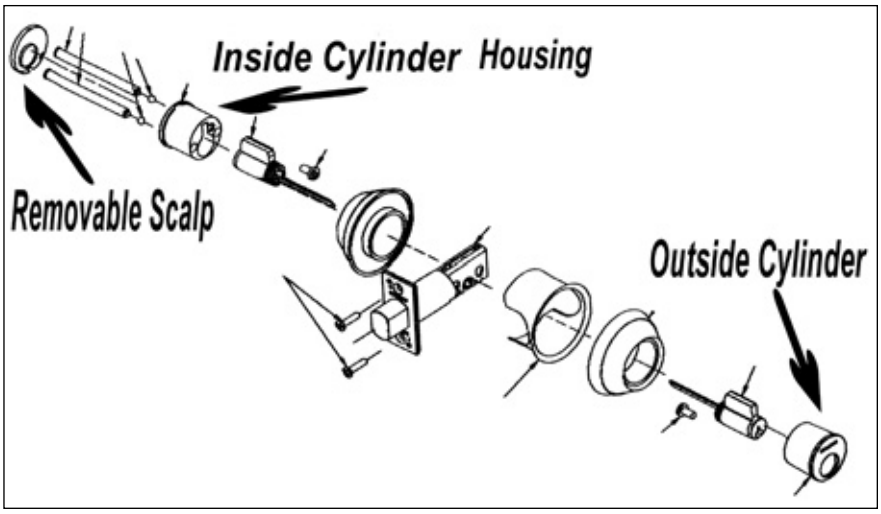
These pads are available from most grocery or auto body supply stores. They are 6" x 9" and one pad will clean a lot of cylinders. Since the pads are abrasive, I found that other cleaners, abrasives or oils are not needed to enhance the cleaning action of the pads.

Sure makes finding a code on a corroded cylinder much easier.

Frank Kitchen
Indiana

ILCO KEYBLANKS WINNER:
Schlage Deadbolt Tip

I have been a locksmith for 10-years



1. Schlage deadbolt drawing.

and got stumped on the removal of a Schlage heavy-duty deadbolt.

The customer called me to re-key their restaurant and after doing all the outside doors and some interior doors, I came to an office that had a heavy-duty Schlage double-cylinder deadbolt on the door that I was not familiar with.

I couldn't find the retainer screws that held the cylinders together and decided to remove the screws from the deadbolt latch, on the off chance that I could access the cylinder retaining screws like I would on a Lori. No such luck.

Not wanting to damage or destroy the lock, I called Schlage's technical service line and the person that answered was very helpful. He explained that the inside cylinder housing had a scalp plate over the retaining screws and that I could remove the plate and access the retaining screws to remove the deadbolt from the door for re-keying. He even sent me a fax with a drawing explaining the procedure. *(See Illustration 1.)*

George Steiner
Nevada

KEEDEX WINNER:
Simple Simplex Combo Change

There was an article in *Beginner's Corner* recently about finding a lost combination for a Simplex lock. I think my tip is quicker and easier, and I thought I'd share it.

First, remove the combination chamber, as mentioned in the article, and then remove the staked cover. Now look carefully at the gates on the wheels and take note of the distance each one is away from the locking slide plate.

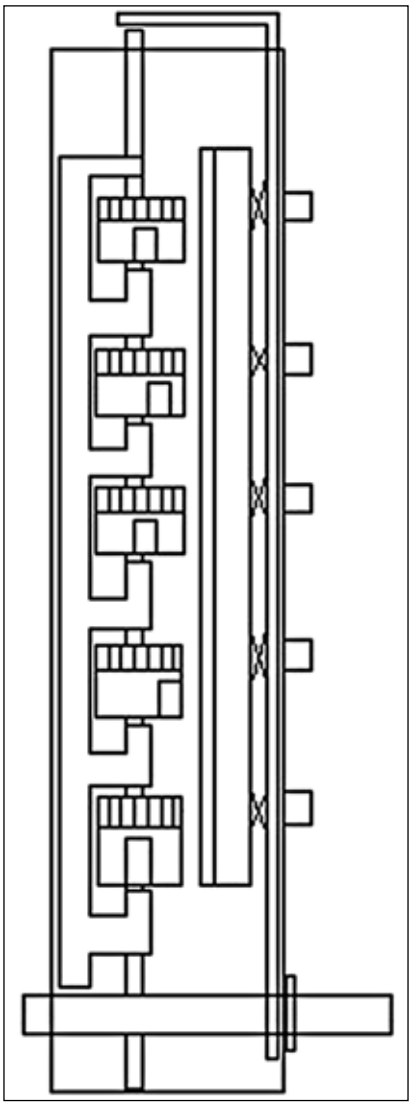
The gate that is the farthest away from the fingers on the slide plate is the first digit in the combination. *(See illustration 2.)* The next wheel that is farthest from the slide plate is the next number. Repeat the process until all the gates are aligned under the slide plate and that's the combination.

No need to remove those tiny "C" clips or to dismantle any internal parts.

My example in the illustration shows a combination of 4-2-1-3. In the event that two wheels are equal distances away from the slide plate, it indicates that those buttons have to be pushed together simultaneously.

I found this method to be fast, easy and accurate without the possibility of losing very small parts and springs.

Robert Smith
California



2. Simplex lock drawing.

TECH TRAIN TRAINING VIDEO WINNER:
Automotive Picking Tips

Generally, I find that I can pick Ford 10-cuts, most Honda/Acura, most Nissans, and Subaru with a DA-25 keyway.

Recently I have run into some Honda's that would not pick as easily as they had in the past and the lock felt different.

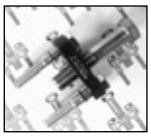
What I discovered was that the owners of these vehicles seldom used their keys to unlock the cars. They always used their remotes. This caused the wafers in the locks to freeze up and not respond well to my picking efforts.

To resolve the problem, I used an uncut blank and ran it in and out of the keyway several times before trying to pick the cylinder. If that doesn't work, a little lubricant in the keyway along with the exercise of the uncut blank will usually solve the problem for me.

On many Nissans I have much better success by picking the cylinder counter-clockwise (which is the unlocked position on the passenger doors).

Before attempting to pick any of these locks, check your opening manuals to see what the recommended direction is for picking.

Adrian Slater
Virginia



SIEVEKING PRODUCTS GM E-Z WHEEL PULLER WINNER:
Capping Off A Cam Lock Installation

After installing cam locks for a customer, they asked me if I had anything that would "dress up" holes in other cabinets and doors where cam locks had been previously installed and removed when security was no longer an issue.

I thought about it for a while and found that electrical blanks for ½" conduit fit the cam lock holes perfectly. These blanks are chrome with spring steel tensioners around the edges that hold them firmly in place once inserted into an opening.

In the electrical trade they are used to fill unused holes in junction boxes that ½" conduit would normally go into. The cost is about $.25 each and should be available from home centers and electrical supply houses.

They look good and work great for filling in unsightly holes.

Paul Shriber
Illinois

MAJOR MANUFACTURING PRODUCTS WINNER:
Child Care Gate Latch Fix

The director at a pre-school had trouble keeping a gate latched that divided the children's play area from

the parking area. Of course that created a safety issue for the children and opened the school up to potential liability should one of the children wander out the gate.

The gate was set up with an intercom, an electric strike, a storeroom function knobset, a deadbolt and a door closer that were all functional and working properly.

The gate latch was located near the top of the gate and well out of reach of the children. However, although the closer operated properly, the gate latch would not catch. Obviously, the latch's proper operation is critical to the safety of the children as it prevents the children from simply turning the knobset and exiting the playground area.

My challenge was to solve the latch problem while maintaining the current locking setup with the existing hardware.

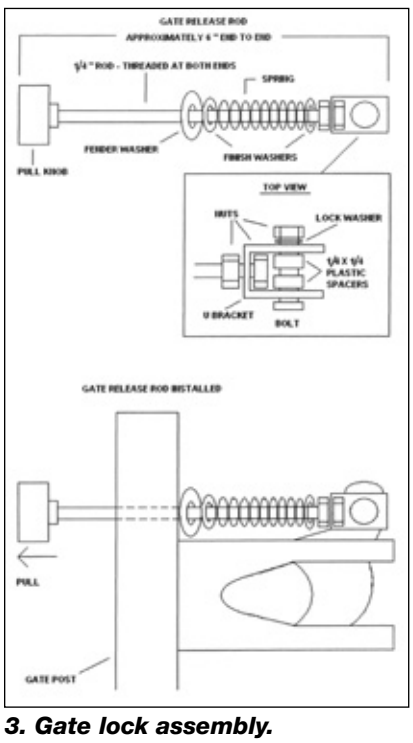
The gate latch was welded to a square tubular frame, with holes drilled through it to accommodate a cable release that was no longer used.

I solved the problem using a modified car battery hold-down rod. I designed a spring-loaded rod, which forced the gate latch to drop into place and catch as it was designed to do.

I affixed a small knob to one end of the rod and inserted the rod through the existing hole in the gate's frame. Then I assembled the washers, spring, nuts, lock washers, spacers and a bolt to the rod with the "U" bracket. Spacers connected to the gate latch lever. *(See illustration 3.)*

A slight adjustment on the closer allowed the gate to close properly and the latch to catch the keeper on the gate.

John Marske
California

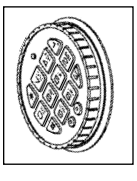


3. Gate lock assembly.

Editor's Note: John, I'm assuming from the drawing that there is a short round rod with a ball on the end of it that sits behind the latch when the gate closes. I'm also assuming that the latch will swing inward from the pressure of that rod and drop down behind the rod, thus securing the gate. From your illustration, the spring on your modification will force the latch down when the knob is pulled from the inside. This brings a question to mind. Does your arrangement have a second spring on it to cause the latch to drop when the gate closes or is the spring attached to both the post and the latch to act as a "pull" when inward pressure is put on the latch and the rod clears the tip of the latch allowing the latch to drop?

You're approach to solve the problem for the pre-school is unique and from a creative standpoint, I think it is outstanding. I only have one major concern and that is the Life Safety issue. Since there is already a storeroom function lock and a deadbolt on the gate, plus the latch you mentioned, does this gate's locking mechanisms meet code?

For future reference, John, DETEX has an alarmed exit device (Wetlock ECL-8010W Exit Control Device) specifically designed for applications on exterior gates. It may, or may not have been appropriate for this application.



LA GARD WINNER:
Quick and Easy Vault Entry

A local church called with the complaint that they could not get into their vault.

When I got there and questioned the office manager about the behavior of the vault preceding the lockout, I found that the lock had been acting up for a long time and then it just wouldn't open.

The office manager took me back to the vault and the first thing I noticed was the name Diebold. The second thing that I noticed was that it had one of Diebold's early spy-proof, manipulation resistant locks on it. For me neither of those features were good signs.

Never having opened a vault before, I was a little intimidated by the prospect. I decided to look the situation over before calling a friend of mine who had a lot more experience than I did in opening vaults.

The first thing I did was get a ladder and remove a ceiling tile to see if there might be access to the vault's interior from the ceiling. The top of the vault was solid concrete.

Then I went into the pastor's office, which backed up to the vault, to see if I could find a wall I could get through to access the vault. The walls were all very expensive wood paneling.

Going back to the front of the vault, I noticed a door to the left of the vault door. It turned out that the door opened into a janitor's closet.

I took some measurements from the edge of the vault door to the edge of the door jamb of the closet door and transferred the measurements from the inside of the door's jamb to the wall next to the vault. I found about an 8" difference.

I took another measurement from the floor to the center of the vault's handle, transferred that measurement to the inside wall next to the vault and drilled one 1/2" hole through the concrete block. No obstructions, no solid concrete, no barriers of any kind only the concrete block. Using my bore scope, I looked though the hole and could see the inside emergency handle.

Unfortunately, I could not find a way to manipulate the handle. I drilled holes all the way around the perimeter of the single concrete block I was looking through, used a hammer to knock the block out, reached in and pulled the emergency handle and opened the vault door.

The vault needed a new lock. The wall needed a new concrete block, and some paint. I was happy to supply all of that. About 35 minutes was the total opening time from start to finish. Not too bad for a new safe tech.

Dan Corner
Florida

TNL

THE CASH STATION

by Mark Daniel

LeFebure Square Door

SPEC SHEET:

Safe Manufactured by:
LeFebure

Safe Model #:
Square Door

U/L Rating:
TL-15

Safe Size:
20" Wide, 22" High, 26" Deep

Door Size:
17-3/4" Wide, 20" High

Handle Type:
L Style

Handle Location:
6-3/4" Down, 6-3/4" Left of opening edge.

Handle Rotation:
Clockwise to open

Dial Center to Handle Center:
3-1/2"

Dial Location:
6-3/4" Down, 3-1/4" Left from opening edge.

Number of Door Locking Bolts:
3

Door Locking Bolt Locations:
3-1/2", 10" and 16-1/2" down from top of door.

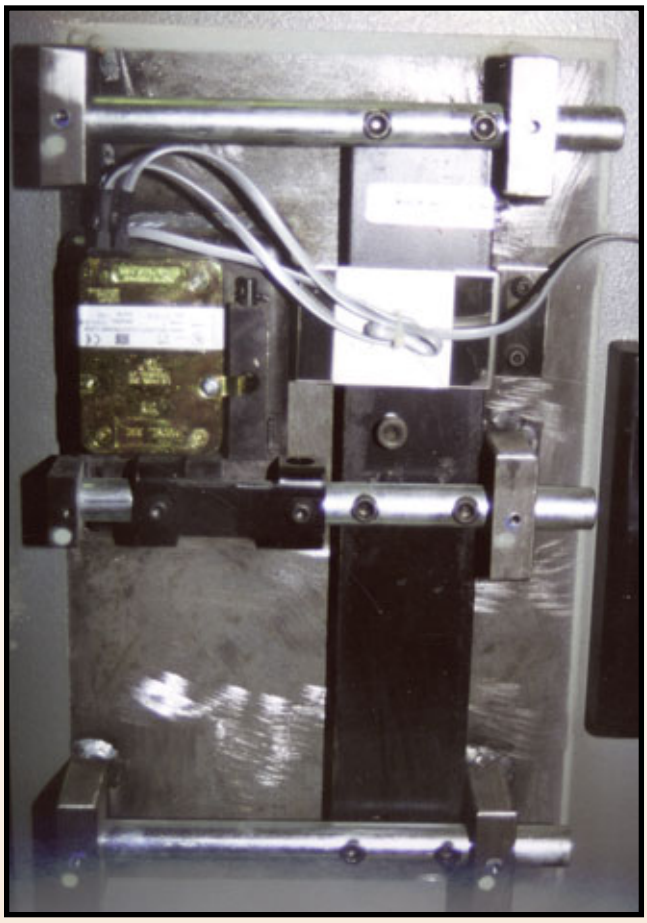
Door Locking Bolt Diameter:
3/4"

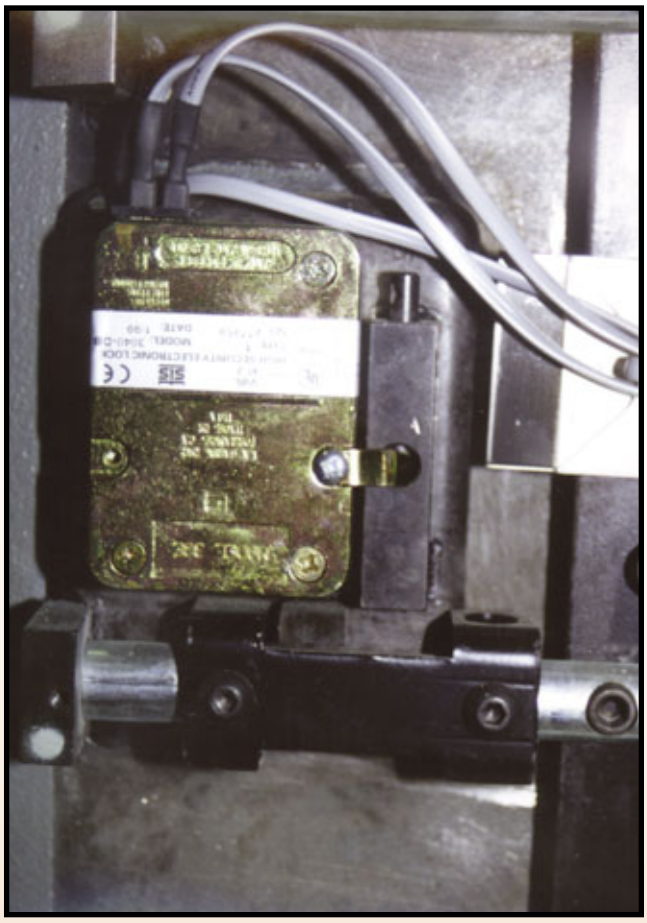
Door Thickness to Bolt Center:
2-3/4"

Door Thickness to Lock Case:
2-1/4"

Door Thickness to Back of Lock:
3-3/8"

LeFebure Square Door





Combination Lock Type:
LaGard 33E, ComboGard electronic lock. (late style)

Combination Lock Description:
Electronic lock with multiple function capabilities.

Combination Lock Case Thickness:
1-1/8"

Number of Wheels:
N/A

Combination Lock Handing:
Vertical Down, (V/D)

Combination Lock Opening Procedures:
1. Enter six-digit combination. Two audible beeps will follow verifying correct entry.
2. Turn dial to the right to open.

Combination Lock Drill Point:
1-1/4" Down, 7/16" Left of dial center.

Combination Lock Relock Trigger Type:
Spring Wire

Combination Lock Relock Trigger Drill Point:
3/4" Down, 1/4" Left of dial Center. Use a small hook and pull wire relocker towards face of safe.

Combination Lock Notes:
Although this safe had a late model 33E lock, check the date on the back side of the key pad. You never know what version you may find.

Combination Lock Changing Procedures:
1. Enter six zeros (0).
2. Enter old combination once.
3. Enter new combination two times.
After each correct entry lock will beep twice.

Key Lock Manufacturer:
N/A

External Relock Device Type:
Spring-loaded pin, activated when the back of the lock is removed or the lock is punched.

External Relock Device Drill Point:
4-1/2" Right of opening edge of door, 9-3/8" down from top of door.

Time Lock Manufacturer:
N/A

Special Notes:
Ball bearing hardplate from LaGard. TNL

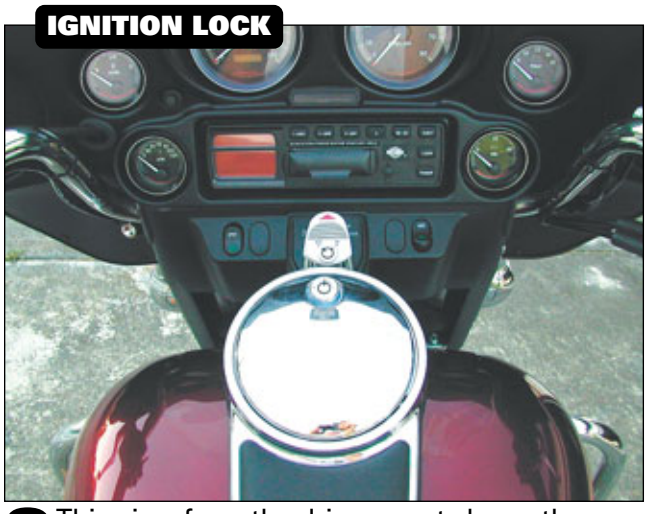
PART 1

2002 Harley-Davidson ULTRA CLASSIC ELECTRA GLIDE

by
John Blankenship

1 This is Harley-Davidson's top-of-the-line touring motorcycle and carries a price tag of $19,185. The locks are made by Fort and the same tubular key operates all of the locks on the bike, including the luggage. There are no codes on the locks but it makes no difference because the HD series codes have not been released and are therefore unavailable. The ease of originating a key depends upon your skill with a tubular pick.

IGNITION LOCK

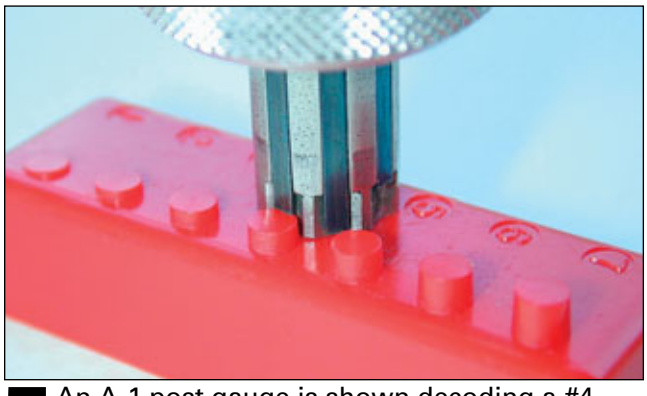


2 This view from the drivers seat shows the ignition/steering lock just in front of the gas lid lock. The gas lid lock will not help you in originating a key because there are no tumblers in the lock; an 1137B blank will open it.

3 The ignition/steering lock is shown in the UNLOCK position. The key can be removed in either the LOCK or UNLOCK positions. The ignition switch is shown in the OFF position. While it is unlocked you can turn the switch clockwise to the IGNITION (ignition on) or ACCESS (accessory) positions. You can also push the switch down and turn it counterclockwise to the FORK LOCK position. You can turn it to FORK LOCK with the steering in any position, but as soon as you turn the steering to the far left or right it will lock in place until you turn the switch back to OFF. If you turn the lock clockwise to the LOCK position the switch cannot be turned. This lock/switch unit is not easy to remove. The local Harley-Davidson dealer charges for 2.5 hours of labor at $75 per hour to replace this lock.

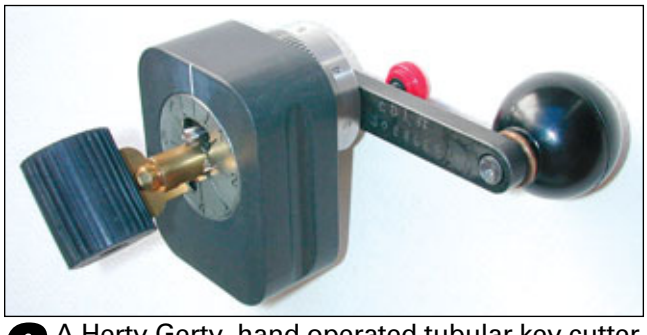
4 A tubular pick is shown inserted into the ignition lock. The shear face of the rotating sleeve inside the lock is castellated and trap pins are used for security, so this is not an easy lock to pick. The three luggage locks are also castellated with trap pins but you can give them a try too. If you are successful in picking any of the locks you can decode the pick and cut a key.

7 The original key is on the right. The code cut 1137B with cuts of 4176613 (clockwise looking at the tip) operates all of the locks on the motorcycle.



5 An A-1 post gauge is shown decoding a #4 depth in the first space of the tubular pick. The shortest post is a #1 depth and the tallest post is a #7 depth. Move the pick from post to post until you find the one that matches the height of the pick element for each space. The pick decoded to depths of 4176613 clockwise as you look at the tip of the pick.

Note: *Fort Lock Corporation uses depth numbers of 0-6, but most other companies use the standard 1-7 depth numbers. The tubular key cutter and both decoders that are used in this article use the standard 1-7 depths so that is what we will use here. Fort Lock also shows the spacing numbers clockwise as you look at the tip of the key and so does the tubular key cutter used in this article so that is what we will use here.*

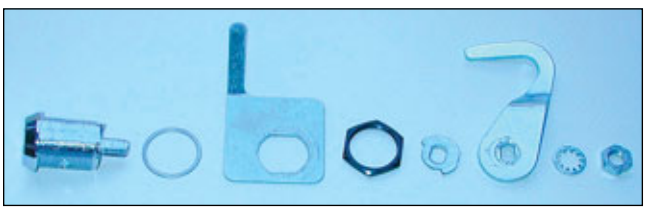


6 A Herty Gerty hand operated tubular key cutter by A-1 Manufacturing Corp. is shown after cutting a #7 depth in the third space. The space dial is set up for Fort spacing in that the cuts on the key will be numbered clockwise looking at the tip of the key.

8 If you are not successful at picking any of the locks, check the luggage to see if the trunk or saddlebags are unlocked. If you are able to open any of them, you can disassemble the lock and decode it. The photo shows the trunk and it opens from the right side.

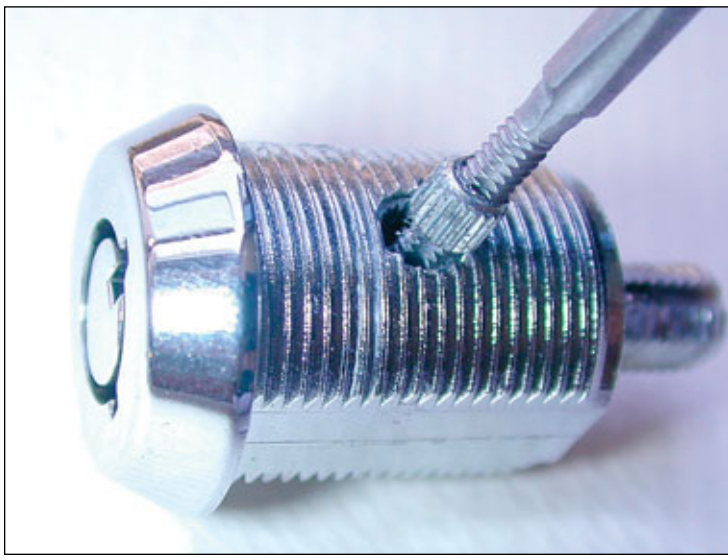
9 The trunk lock is shown in the unlocked position. All of the locks turn clockwise to lock and counter-clockwise to unlock. The lock prevents the lid from being raised but it does not lock the latches. Open the latches and try to raise the lid. If it opens you can make the key.

10 The back of the trunk lock is shown inside the raised lid. Use a 7/16 wrench to remove the nut, vibration washer, tailpiece, and stop plate. Then use a crescent wrench to remove the mounting nut and guide plate. Now the lock and gasket can be removed from the outside of the lid.

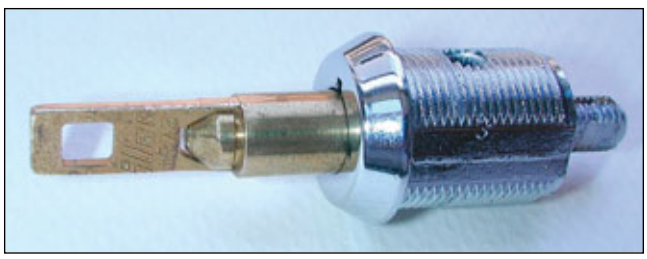


11 All of the parts we have removed so far are laid out in order of assembly.

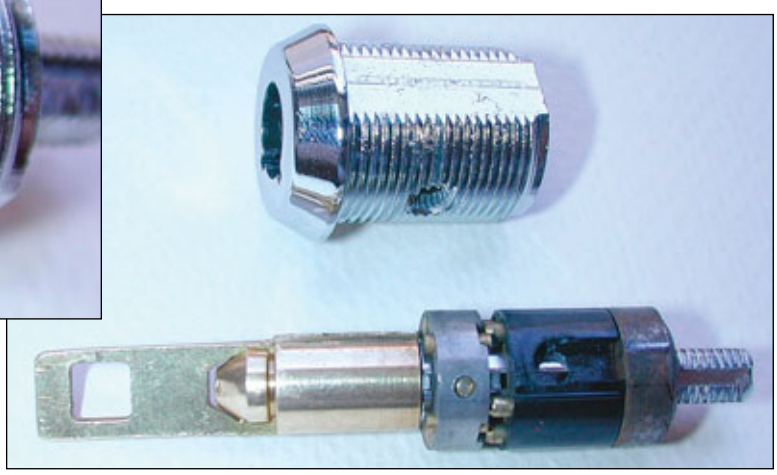
12 The retaining pin is visible on the side of the trunk lock.



13 I put the flat sides of the lock in a vice and drilled a small pilot hole in the center of the retaining pin. I then drilled it with a #40 drill and tapped it. The end of the tap made contact with the rotor inside the lock and I continued turning the tap. The threads of the tap easily pulled the retaining pin out. A #40 drill is almost too big; I think a #50 would be better.



14 I did not have a follower so I used a hacksaw to cut off the sides of the bow on an 1137B blank so it was as narrow as the rest of the blank. The tab on the tip of the blank pulls right out after you cut it down like this. Use the follower to hold the rotor and barrel together while you remove them from the back of the shell. This will prevent the pins from falling out and getting mixed up. You want to keep the combinating pins in the rotating sleeve so you can decode them in order.

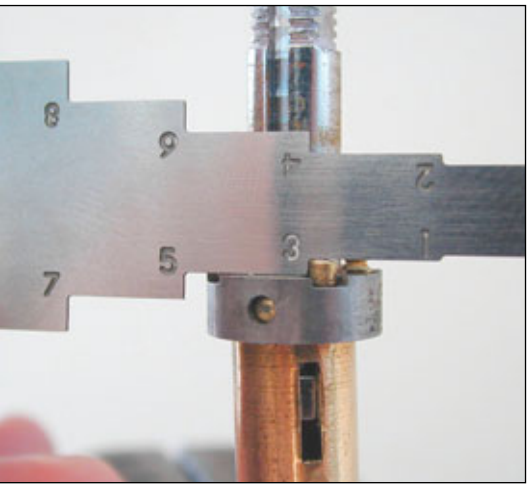


15 The follower, rotor, barrel, and spacer have been removed without spilling any pins.

Continued on page 112

Continued from page 110

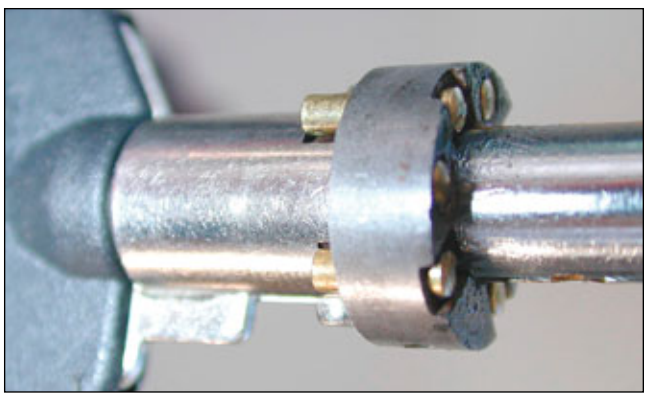
16 The rotor has been removed from the barrel and spacer. Keep the rotor in a horizontal position to keep the combinating pins from falling out. The top pins and springs were left in the barrel.



17 Place a blank in position on the nose of the rotor, turn the shaft upward and clamp the bow of the blank in a vice. An HPC decoder is shown measuring the height of the #3 depth pin in the seventh space. This pin is in a castellated area of the rotating sleeve but just use the shear face as a rest for the decoder and it will decode the depth of the pin accurately. Decode all of the pins in order and you will be able to code cut a key to operate all the locks on the motorcycle.

18 You can also measure the combinating pins to decode the lock. From left to right are the combinating pins with depths of 4176613. I measured the length of each pin and then calculated the length of the missing #2 and #5 depth pins. Table 1 shows the length in inches for each depth pin. There is a groove around the pins near the shear end. They are trap pins and are designed to make picking more difficult.

Table 1	
1	.206
2	.222
3	.237
4	.255
5	.270
6	.284
7	.301



19 The proper key inserted onto the nose of the rotor positions all of the pins at the shear line. Another way to make the key is to cut a key to all #1 depth cuts. Insert the key onto the nose of the rotor, tilt the shaft up so the pins bottom on the key, and observe which, if any, pins are at the shear line and make a note not to cut that space(s) any deeper. Cut the rest of the spaces to a #2 depth, insert the key, and observe which, if any, of those spaces are at the shear line. Repeat the process until all of the pins are at the shear line to obtain a working key. Or, to save time, you can eyeball the heights of the pins above the shear face and cut the estimated depths while making sure you err on the shallow side. Then finish cutting the spaces down one depth at a time until all pins are at the shear line.

Next month we cover the saddlebag lock and how to disarm the alarm. TNL

BUSINESS BRIEFS

Scott M. Baker—New President for Securitron Magnalock

Securitron Magnalock Corporation is pleased to announce the appointment of Scott M. Baker as President & CEO. The announcement was made by ASSA ABLOY North America President, Clas. He replaces Robert (Bob) Cook who was appointed President of Medeco Security Locks in Salem, Virginia.

Baker joined Securitron in 1984 as Field Sales Manager. He has been Director of Sales since 2000 and becomes the second President in Securitron's twenty-one year history.

ASIS International's CPP Review Program

ASIS International will have a CPP Review Program in Philadelphia, one of over 40 educational programs offered by ASIS in 2002. ASIS International is preparing the next CPP Review program, which will be held September 7–8, preceding the 48th Annual Seminar and Exhibits, in Philadelphia, PA. The two-day course, offered in both English and Spanish, provides an overview of the fundamental concepts and practices of security management.

The comprehensive program is conducted by security practitioners who are CPP certified, and includes security topics such as: Emergency Planning; Protection of Sensitive Information; Personnel Security; Investigations; Legal Aspects; Loss Prevention; Physical Security; Security Management; and Substance Abuse.

For more information on ASIS, visit www.asisonline.org or call (703) 519-6200.

Access Hardware Supply Offers Biometric Readers

Recently added to the inventory at AHS is the VeriSeries line of security products manufactured by Bioscrypt, Inc. These biometric readers utilize fingerprint and card identification technology for an advanced level of access control.

The VeriSeries line consists of four biometric readers, tailored to different security needs. Each one uses

the same advanced fingerprint reader technology, which identifies the user in less than a second. The patented fingerprint algorithm maintains its accuracy even when faced with wet, dirty or scarred fingers. The ergonomic design has a weatherproof housing and intuitive user interface with lights and tones. The VeriSeries line includes a model that integrates with existing access control systems and models with proximity and smart card reader functions.

For more information call: (800) 348-2263.

Clark DC Branch Relocates

The Clark Security Products DC branch formerly in Lanham, has moved into a new 31,000 square foot location, which houses their office building, warehouse, and will call area. The location is 12006 Plum Orchard Drive, Silver Spring, MD 20904. The new location offers 21,000 square feet of warehouse space, which makes this location the second largest state of the art distribution facility out of the 13 Clark locations.

For more information about this location, feel free to call the branch at (301) 572-1901.

Security Lock

In keeping with its position as the nation's in-depth distributor, Security Lock has published an extensive new combination price book and catalog containing information on the full line of Kaba/Ilco products.

Described in great detail are all Heavy Duty Primary Locks, Exit Device Controls, Narrow Stile Lock, Commercial and Residential Locks, Switch controls, Cabinet Locks and File Guards.

Each section of the catalog contains individual product descriptions, photographs, exploded views illustrating the positioning of components, application, specification and ordering data. Prices for all products, options and accessories are also included.

For free copies call (800) 847-5625 or fax (800) 878-6400. E-mail: enfor@seclock.com; Web www.seclock.com.

Special-Lite Partners with IR Security and Safety in New Turnkey Program

In a new "Turnkey" product promotion, Special-Lite partners with IR Security and Safety by standardizing on Von Duprin exit devices and LCN door closers.

Dow Ruch, vice president, sales and marketing for Special-Lite said, "When we considered a door package to compliment our product line, we wanted it to include well-accepted hardware brands. Thus, we standardized on Von Duprin and LCN for the package offering. Our 10-year 'No Nonsense Warranty must not be compromised."

IR's Don McAtee and Lee Eisen Roberts worked closely with Special-Lite to develop the firm's Quick Ship Turnkey program. It offers the Special-Lite SL17 FRP Door with an immediate frame and commonly applied hardware at competitive pricing. TNL

FREE Code Cards!
from The National Locksmith®

COLLECT 'EM ALL!!

Spaces		Depths		Cutter: CW47MC	IC #: 903
	mm	Inch		mm	Inch	Jaw: A	Series	Original
1	2150	846	1	820	323		50000-69999	
2	2010	791	2	755	297			
3	1800	709	3	690	272			
4	1660	654	4	625	246			
5	1450	571						
6	1310	516						
7	1100	433						
8	960	378						
9	750	295						
10	610	240						

Align: Black horse shoe tip stop

Key Blank Mfr.	Blank #
Boerkey	162300T10
Errebi	T04TY37RP
Ilco	TOY43AT4
Jet	TR47-PHT
Orion	T10TY51A
Silca	TOY43AT4

The National Locksmith®

Cut Along Outside of Card and Laminate To Use

Spaces		Depths		Punch	IC #: P903
	mm	Inch		mm	Inch	Jaw: A	Series	Original
1	2150	846	1	820	323		50000-69999	
2	2010	791	2	755	297			
3	1800	709	3	690	272			
4	1660	654	4	625	246			
5	1450	571						
6	1310	516						
7	1100	433						
8	960	378						
9	750	295						
10	610	240						

Insert key such that face of jaw meets key profile

Align: Tip stop (Left Insertion)

Key Blank Mfr.	Blank #
Boerkey	162300T10
Errebi	T04TY37RP
Ilco	TOY43AT4
Jet	TR47-PHT
Orion	T10TY51A
Silca	TOY43AT4

The National Locksmith®

BONUS Code Card
For the 1200CMB™

Flip 'em over for Silca, Curtis, Framon, A-1 and ITL specs!

Code Card
For the 1200PCH™

Courtesy of INSTA-CODE 2002™ from The National Locksmith

Toyota 50001-69999

HPC 1200CMB™

HPC Code Card: CF307 Cutter: CW-47MC
Jaw: A Gauge: From tip

Silca Unocode

UnoCode Card No.: 1420

HPC Codemax™

DSD: 176
Jaw: A
Cutter: CW-47MC

Curtis No. 15 Code Cutter

Cam Set: N/A
Carriage: N/A
Clipper: N/A

Framon

Cuts Start At: 404 Cutter: N/A
Spacing: .0551 / .0826 Alternating
Block #: N/A Depth Increment: .0255
Key Clamping: Key aligned using left side of vice / spacing clip

A-1 Pak-A-Punch™

Quick Change Kit: N/A
Punch And Die: N/A

ITL 9000 & 950

ITL Manufacturer ID: N/A

ECM 200

N/A

Toyota 50001-69999

HPC 1200PCH™

HPC PCH Card: N/A Punch: N/A
Jaw: N/A

Silca Unocode

UnoCode Card No.: 1420

HPC Codemax™

DSD: 176
Jaw: A
Cutter: CW-47MC

Curtis No. 15 Code Cutter

Cam Set: N/A
Carriage: N/A
Clipper: N/A

Framon

Cuts Start At: 404 Cutter: N/A
Spacing: .0551 / .0826 Alternating
Block #: N/A Depth Increment: .0255
Key Clamping: Key aligned using left side of vice / spacing clip

A-1 Pak-A-Punch™

Quick Change Kit: N/A
Punch And Die: N/A

ITL 9000 & 950

ITL Manufacturer ID: N/A

ECM 200

N/A

KEY CODES

Toyota, Part 8
50001-69999

Special Note: There has been a change in information regarding the Toyota 50001-69999 code series. The specification information and code cards have all been updated. Please disregard the previous specification info and code cards given prior to August 2002 issue. Replace with new information presented here.

Manufacturer: Toyota
Code Series: 50001 - 69999

Key Blanks:
Boerkey: 162300T10
Errebi: T04TY37RP
Ilco: TOY43AT4
Jet: TR47-PHT
Orion: T10TY51A
Silca: TOY43AT4

Number of Cuts: 10
M.A.C.S.: 2
Key Gauged: Tip
Center of First Cut: .846
Cut to Cut Spacings:
.0551/.0826 Alternating
Cut Depth Increments: .0255

HPC 1200CMB
Code Card: CF307
Jaw: A
Cutter: CW-47MC
Gauge From: Tip
HPC 1200PCH (Punch):
PCH Card: N/A
Punch: N/A
Jaw: A
Silca UnoCode
Card Number: 1420
HPC CodeMax
DSD #: 176
Jaw: A
Cutter: CW-47MC
Curtis No. 15 Code Cutter:
Cam-Set: N/A
Carriage: N/A

Framon #2:
Cuts Start at: .404
Cut to Cut Spacing:
.0551/.0826 Alternating
Block #: N/A
Depth Increments: .0255
Key Clamping Info: Key aligned using left side of vise/spacing clip.
A-1 Pack-A-Punch
Quick Change Kit: N/A
Punch: N/A
Die: N/A
ITL 9000 & 950
Manufacturer ID: N/A
ECM 200
N/A

Spacings:
1 - .846
2 - .791
3 - .709
4 - .654
5 - .571
6 - .616
7 - .433
8 - .378
9 - .295
10 - .240

Depths:
1 = .323
2 = .297
3 = .272
4 = .246

66366	1232443243	66411	2332433321	66456	2132342311	66501	2332323211	66546	3432223423	66591	3332122243
66367	1132443234	66412	2132433312	66457	1232342243	66502	2232322344	66547	1132223422	66592	2332122234
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66377	3332442321	66422	2232432343	66467	1132332312	66512	3232322132	66557	3232213421	66602	1232113344
66378	3232442312	66423	1232432334	66468	3432332243	66513	2132322123	66558	2332213344	66603	1132113312
66379	2332442311	66424	4332432321	66469	2332332134	66514	3232322121	66559	2232213312	66604	4332113243
66380	2232442244	66425	3432432312	66470	2132332132	66515	2132322112	66560	2132213244	66605	3432113232
66381	2132442243	66426	3332432311	66471	1232332121	66516	1232322111	66561	1232213243	66606	3332112344
66382	1232442234	66427	3232432244	66472	4332331132	66517	1132321244	66562	4332212344	66607	3232112334
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66385	3232442133	66430	1232432232	66475	2332324432	66520	3232321221	66565	2332212311	66610	2132112243
66386	2332442132	66431	4332432134	66476	2232324423	66521	2232321134	66566	2132212244	66611	1232112234
66387	2232442123	66432	3432432133	66477	1232324422	66522	2132321132	66567	1132212243	66612	1132112134
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66390	4332442111	66435	2132432122	66480	3232324334	66525	3432234312	66570	3232212132	66615	3332111243
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66405	3432433443	66450	2132343422	66495	3232323244	66540	3332231243	66585	3332123243	66630	1123442133
66406	2332433434	66451	1232343421	66496	2232323243	66541	3232231132	66586	3232123232	66631	4323442121
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66408	1132433423	66453	3432343243	66498	3432323223	66543	2132224343	66588	2132122334	66633	3223434343
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66410	3432433344	66455	2232342312	66500	3332323212	66545	4332223434	66590	4332122244	66635	2223433444

Toyota, Part 8
50001-69999

66636	1223433434	66715	3323233421	66794	3423124343	66873	4323111243	66952	1222342311	67031	3222113423
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66647	2123432133	66726	3223232344	66805	2223123432	66884	3222443243	66963	1122333421	67042	3422112133
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66652	3223344343	66731	2223232311	66810	2323123334	66889	2122442133	66968	3222332134	67047	3421344423
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66663	3323342243	66742	3223231243	66821	1123123212	66900	2322434323	66979	1222323421	67058	2321344311
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66667	1223342121	66746	4323231132	66825	3223122332	66904	2322433444	66983	1122323243	67062	1121343432
66668	4323334312	66747	3423231121	66826	2123122321	66905	1222433443	66984	2122322344	67063	4321343422
66669	3223332312	66748	3323224423	66827	1123122312	66906	4322433432	66985	1122322334	67064	3421343421
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WEB REVIEW

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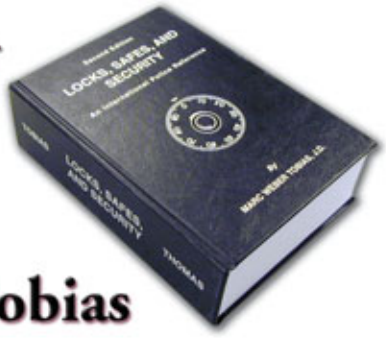

by Marc Tobias

INTRODUCTION:

Marc Weber Tobias is an attorney in Sioux Falls, South Dakota, with Investigative Law Offices, P.C.. Before you start with the attorney jokes, this is one of the good guys. He has more credentials than you can shake a stick at and is known around the world by corporations and governments as a technical fraud investigator and a consultant regarding the bypass of locks, analysis of design defects, and security liability issues.

He has authored four law enforcement textbooks dealing with criminal law, police communications, and security. Tobias received a Bachelor's Degree in 1970 from the University of Nebraska-Omaha, and a Juris Doctor Degree from Creighton Law School in 1973.

Why am I telling you all of this? Because Marc Weber Tobias has written one of the finest reference books in existence.

PRODUCT:

Locks, Safes ,and Security was published on December 27th 2000. It is a 1400 page technical reference work of art. It covers every conceivable aspect of physical security. The book has well over a million words and around 550 photos and illustrations.

FEATURES:

There are 40 chapters in this book and they cover everything from lock history to present day high security systems. Some of the topics are safes, vaults, entry methods, keying systems, impressioning, picking, decoding, forensic examination, magnetic locks, intelligent keys, alarm systems electromechanical locks, specialized industry application, tools and supplies, etc...I think you get the idea.

The chapter on impressioning is 64 pages long. It covers everything from basic impressioning, to the use of composite blanks, foil impressioning, plasticine systems and a new conductive material impressioning system which Tobias received a patent for in 1994.

Another neat feature about the book has to do with how to find information. Because there is so much information, not only do you have an index that is 85 pages long, Tobias has set up a search function on the security.org web site. After a search is completed, it will reference the chapter and section for all of the information in the book that pertains to your search.

PRICE:

The cost for Locks, Safes and Security is $199.95 and is only available in hard cover. All of this information is available on CD-ROM.

CONCLUSION:

Locks, Safes and Security is what I believe to be the most complete reference manual in the world. Virtually everything related to our industry is covered. If you want to know what it is, how to defeat it or even what its patent number is, this book is for you.

CONTACT INFORMATION:

Locks, Safes and Security is available from MBA USA (Mark Bates Associates)

Marc Weber Tobias welcomes feedback from readers. His e-mail address is mwtobias@security.org. He may be contacted toll free utilizing Internet telephony or video conferencing through http://www.security.org.

IN SUMMARY:

Locks, Safes and Security is what I believe to be the most complete reference manual in the world. Virtually everything related to our industry is covered. The cost is $199.95 and a CD-ROM is also available. We give it two thumbs up!

TNL

IN SUMMARY:

DESCRIPTION: A lock, safe and security technical reference.

PRICE: $199.95

COMMENTS: A 1400 page book with over a million words and around 550 photos and illustrations.

TEST DRIVE RESULTS: The most complete lock, safe and security reference in the world.